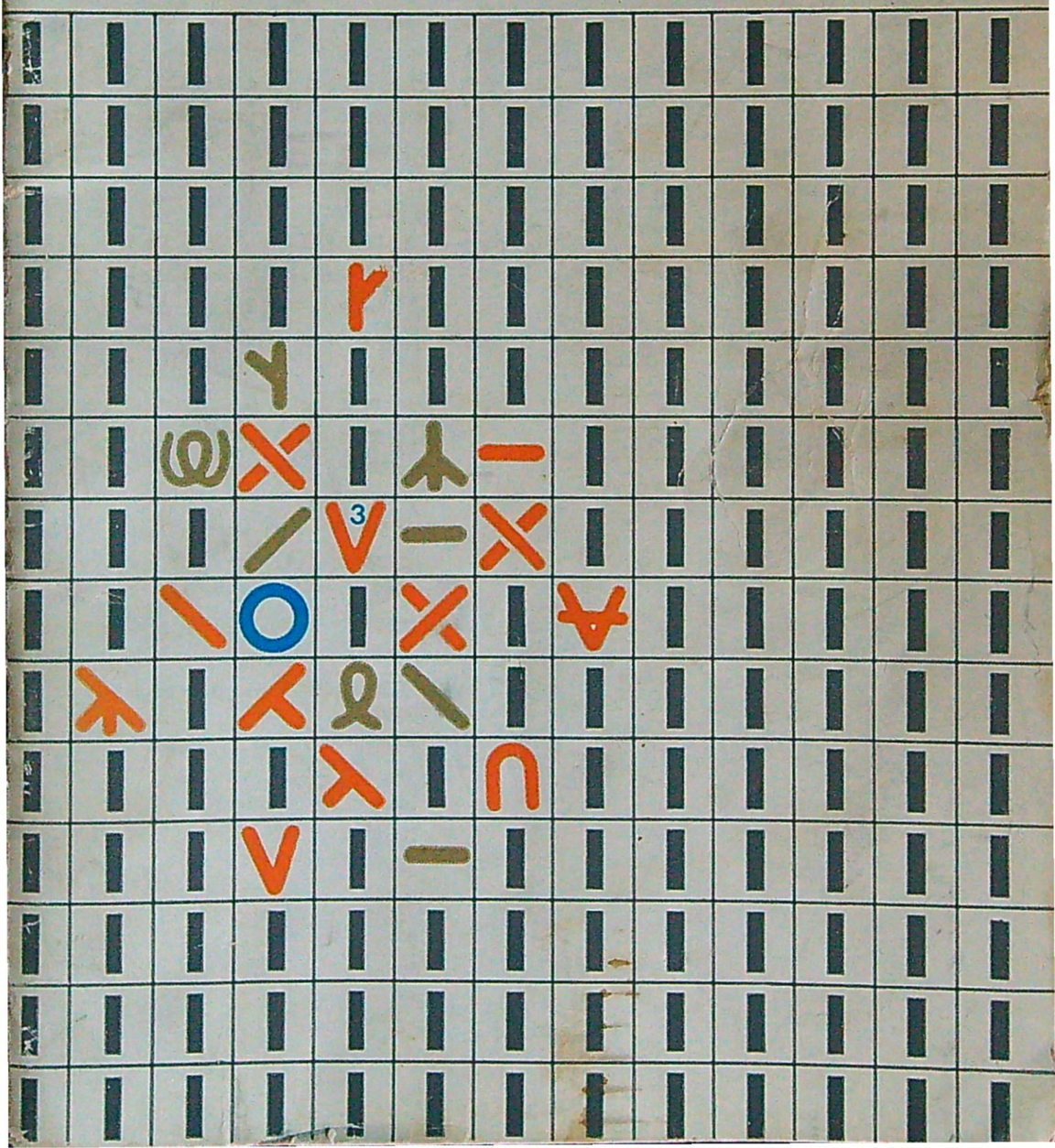


instruction manual **BROTHER-KNIT** MODEL KH-561

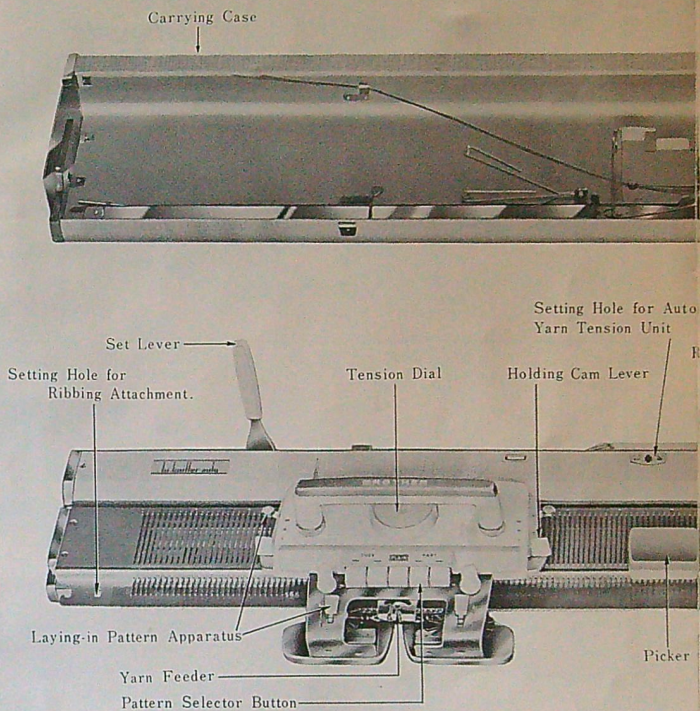
How to master your automatic home knitter

hi-knitter auto

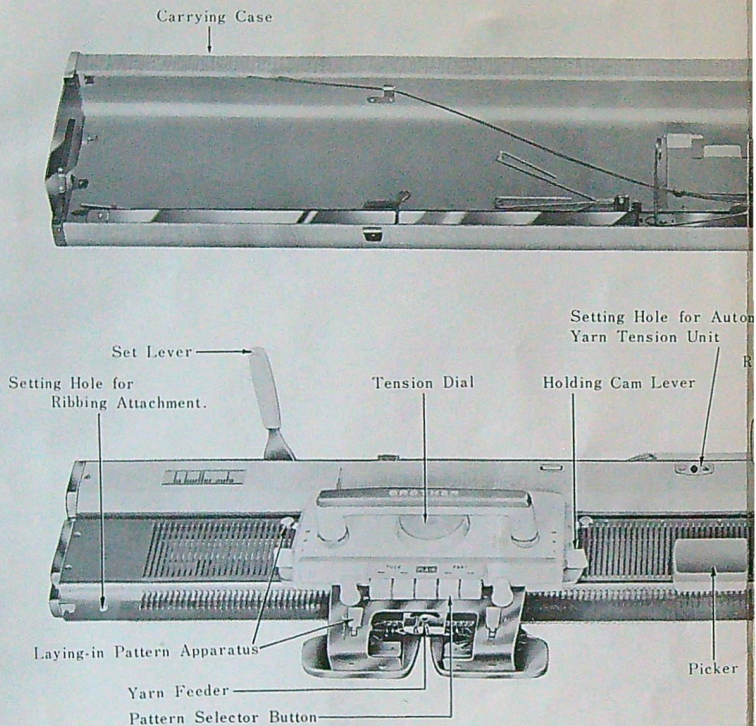


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PART NAME FOR KNITTER



PART NAME FOR KNITTER



Automatic Yarn Tension Unit



matic

ow Counter

Needle Selector Buttons

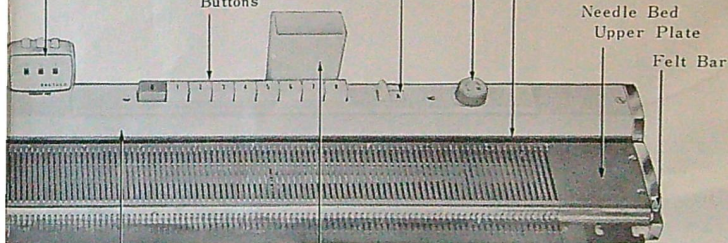
Reverse Lever

Slide Dial

Slide Rail for Carriage

Needle Bed Upper Plate

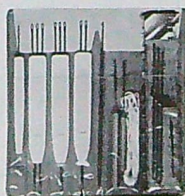
Felt Bar



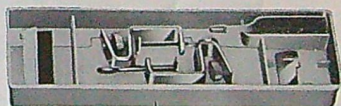
Slide Indicator

Accessory Stand

Gate Pegs

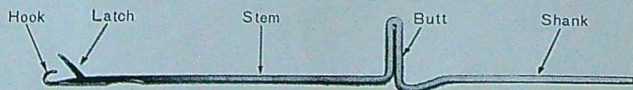
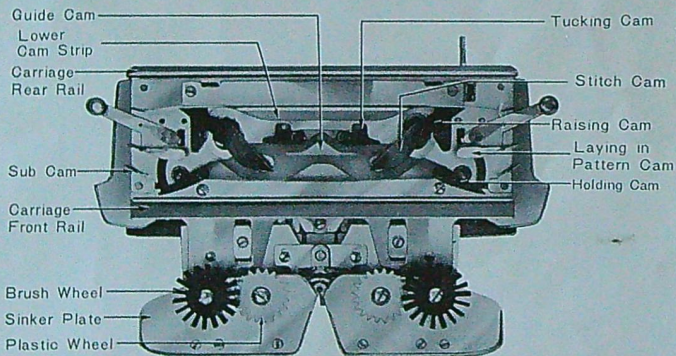
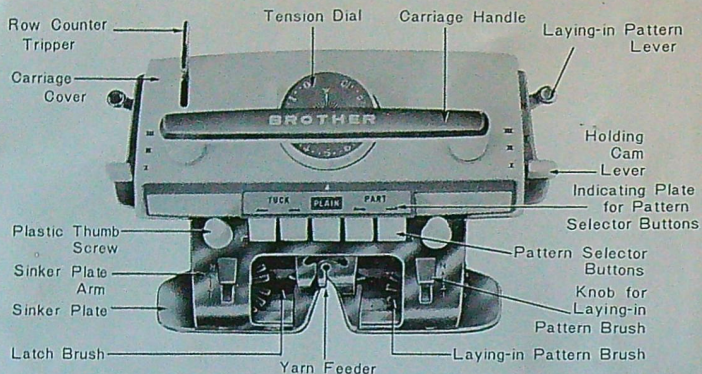


Accessory Kit

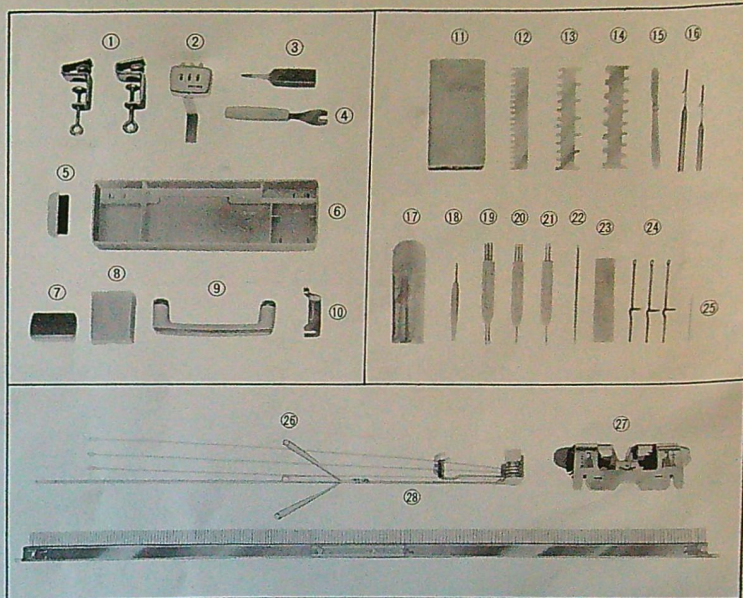


Accessory Box

PART NAME FOR CARRIAGE



PART NAME FOR ACCESSORIES



① Table Clamp

② Row-Counter

③ Oil Bottle

④ Set-Lever

⑤ Hand Brush

⑥ Accessory Box

⑦ Picker

⑧ Accessory Stand

⑨ Carriage Handle

⑩ Carriage Lock

⑪ Accessory Kit

⑫ 0, $\frac{1}{4}$ Needle Pusher

⑬ $\frac{1}{2}$, $\frac{1}{8}$ Needle Pusher

⑭ $\frac{1}{2}$, $\frac{3}{8}$ Needle Pusher

⑮ Cast-on Thread

⑯ Laying-in Pattern Weight

⑰ Plastic Case for Laying-in

Pattern Weight

⑱ Latch Tool

⑲ 2 × 3 Transfer Tool

⑳ 1 × 3 Transfer Tool

㉑ 1 × 2 Transfer Tool

㉒ Crochet Needle

㉓ Plastic Case for Spare Needles

㉔ Spare Needles (3)

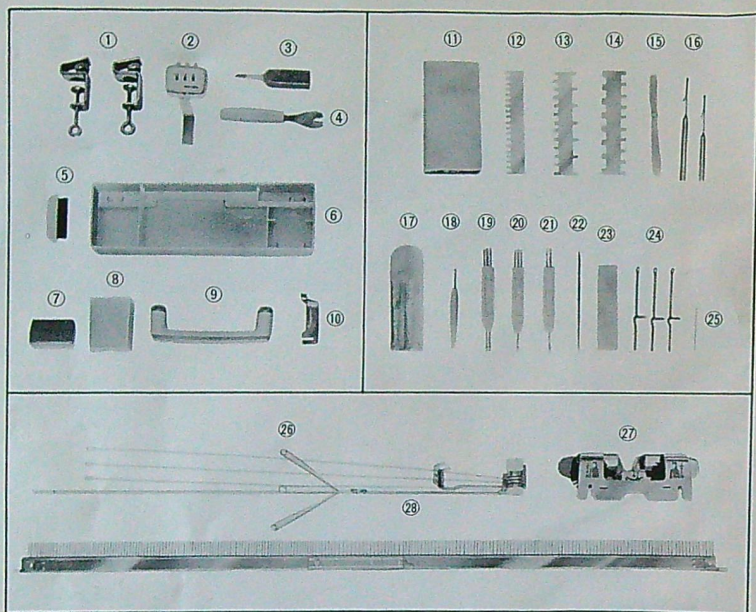
㉕ Tapestry Needle

㉖ Automatic Yarn Tension Unit

㉗ Sinker Plate Assembly

㉘ Cast-on Comb

PART NAME FOR ACCESSORIES



- | | | |
|-------------------|---|----------------------------------|
| ① Table Clamp | ⑪ Accessory Kit | ⑳ 1 × 3 Transfer Tool |
| ② Row Counter | ⑫ 0, 1/4 Needle Pusher | ㉑ 1 × 2 Transfer Tool |
| ③ Oil Bottle | ⑬ 1/2, 3/4 Needle Pusher | ㉒ Crochet Needle |
| ④ Set-Lever | ⑭ 1/2, 3/4 Needle Pusher | ㉓ Plastic Case for Spare Needles |
| ⑤ Hand Brush | ⑮ Cast-on Thread | ㉔ Spare Needles (3) |
| ⑥ Accessory Box | ⑯ Laying-in Pattern Weight | ㉕ Tapestry Needle |
| ⑦ Picker | ⑰ Plastic Case for Laying-in Pattern Weight | ㉖ Automatic Yarn Tension Unit |
| ⑧ Accessory Stand | ⑱ Latch Tool | ㉗ Sinker Plate Assembly |
| ⑨ Carriage Handle | ㉙ 2 × 3 Transfer Tool | ㉘ Cast-on Comb |
| ⑩ Carriage Lock | | |

SETTING UP THE KNITTER



Fig. 1



Fig. 2



Fig. 3

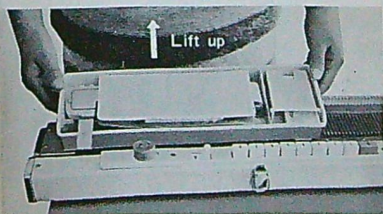


Fig. 4

1. Place your knitter on the edge of any firm and flat table.

Place it with the name plate on top and the handle of carrying case away from you. (See Fig.1)

2. Remove the upper case.

- a. Unlock the catches on both side of the handle (See Fig.2)

- b. Lift the upper case slightly and pull towards you. This will release the upper case which should be placed on the table beyond the knitter, inside up. (See Fig.3)

3. Remove the accessory box on the needle bed.

Lift the accessory box, then it will come off from the needle butts and rail. (See Fig.4)
Place it in the upper case.

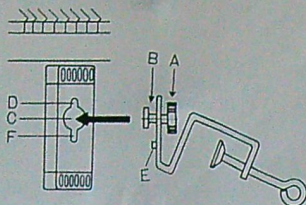


Fig. 5

4. Fasten the knitter to the table.

Remove the table clamps from the accessory box. Raise the front of the knitter, insert the head of screw (B) into the aperture (c). (See Fig.5)



Fig. 6

Press upwards so that the head of screw (B) is in position (D) and fasten the knob (A).

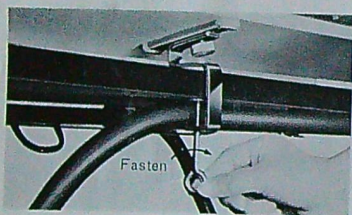


Fig. 7

Fasten the knitter to the table by tightening table clamp screws. It is essential that boss (E) fits snugly into aperture (F). (See Fig.7)

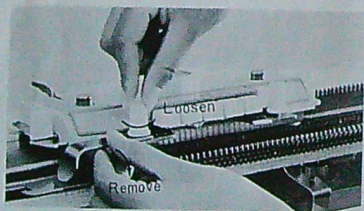


Fig. 8

5. Remove the carriage lock.

Loosen the plastic thumb screws of the carriage and remove the carriage lock. (See Fig.8)

This will free the carriage, which can be made to slide along or off the needle bed.

As the carriage lock is required when repacking the knitter, keep it in the accessory box while the knitter is in operation.

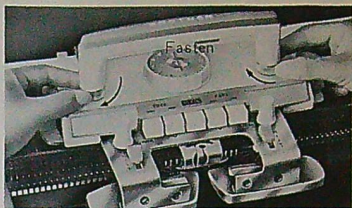


Fig. 9

6. Fasten the handle on the carriage.

Remove the handle from the accessory box and fasten it to the two threaded studs on the carriage. (See Fig.9)
Both sides should be screwd down at the same time to avoid stripping the thread.



Fig. 10

7. Remove the springs inside of carrying case from the catches and open them.

(See Fig. 10 and 11)

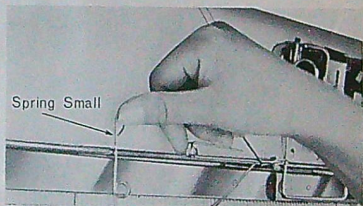


Fig. 11

8. Assemble the sinker plate onto the carriage.

Remove the sinker plate assembly from the upper carrying case. Loosen the plastic thumb screws of carriage, insert the sinker plate assembly as far as it will go and fasten the thumb screws securely. (See Fig.12)

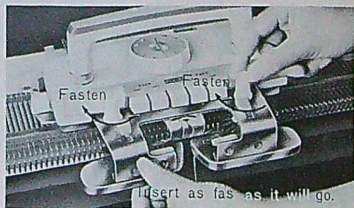


Fig. 12

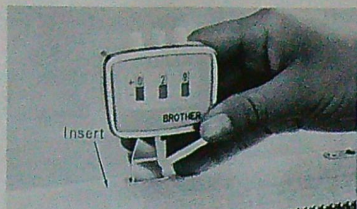


Fig. 13

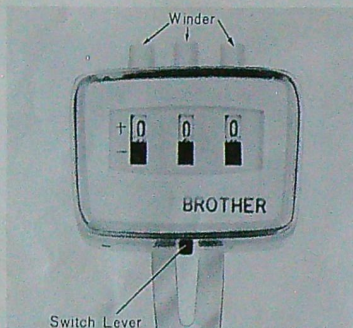


Fig. 14

When you want to preset the figures on the row counter, begin from left one and finish to right one. (See Fig. 14)



Fig. 15

9. Set the row counter.

Set the row counter into anyone of the setting holes on the back of the needles bed. (See Fig. 13)

How to use the row-counter.

By moving the shutter, you can see the black numerals and red numerals.

The red numerals count up from zero to the number of rows you wish to knit.

The black numerals count down from the pre-set number to zero. There are three winders on the top of the counter which turn either way except red numeral is at 9 or 0. When the red numeral is at 9 or 0, left hand side winder of it will turn to only one way.

10. Snap the row counter tripper into position.

- The tripper is located on the left side of the carriage.
- To set the row counter out of operation, turn the row counter tripper toward you. (See Fig. 15)

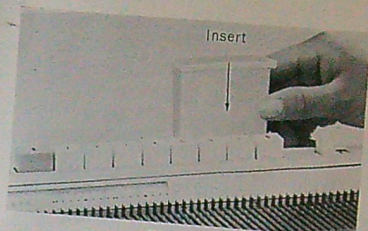


Fig. 16

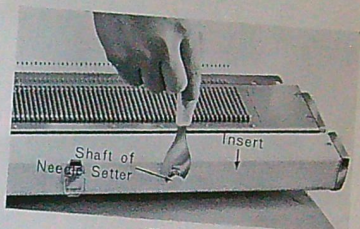


Fig. 17

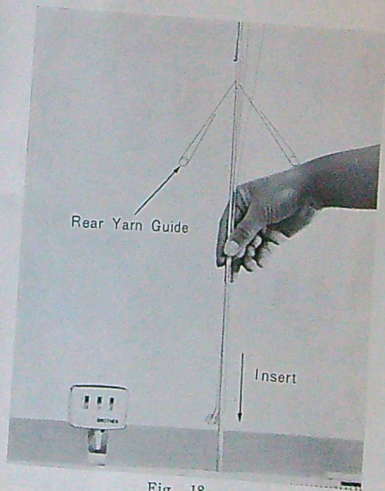


Fig. 18

11. Set the accessory stand.

Take the accessory stand out from the accessory box and set it up on the right side catch of the carrying case locks.

(See Fig. 16)

12. Fit the set lever

Take the set lever out of accessory box and fit onto the shaft of the setter at the rear left of the needle bed.

(See Fig. 17)

13. Attach the automatic yarn tension unit.

- a. Take out the automatic yarn tension unit from the upper carrying case.
- b. Fit the end of the rod into the stand hole at the center of knitter with the rear yarn guides away from you. (See Fig. 18)



Fig. 19

- (1) Turn the locating knob and set the red arrow onto "O".
(See Fig. 19)

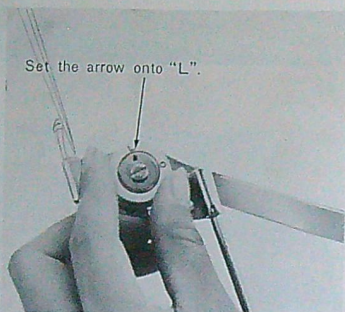


Fig. 22

- (3) Turn the locating knob and set the red arrow onto "L".
(See Fig. 22)
The take up springs and front yarn guide arm are set.

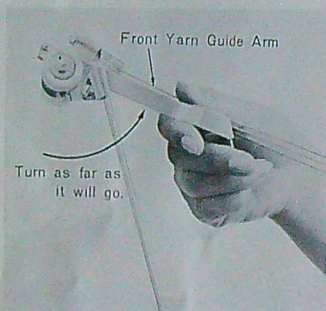


Fig. 20



Fig. 21

- (2) Turn the front yarn guide arm as far as it will go.
(See Fig. 20, 21)

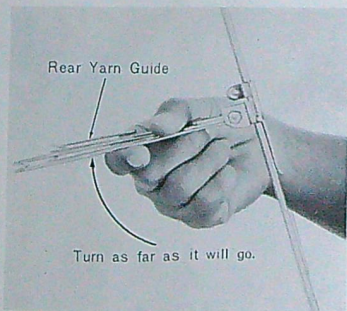


Fig. 23

- (4) Turn out the rear yarn guides as far as they will go.
(See Fig. 23)

● HOW TO USE THE CAST ON COMB

The cast-on comb can be divided in half, and be useful for short width of knitting.
(See Fig. 24)

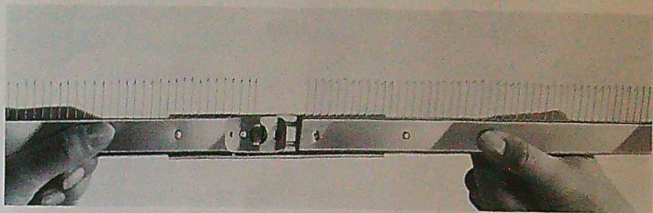


Fig. 24

HOW TO HOLD UP THE KNITTER

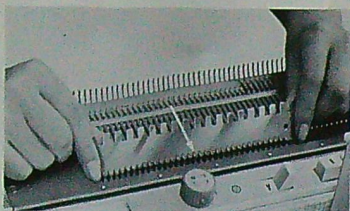


Fig. 1

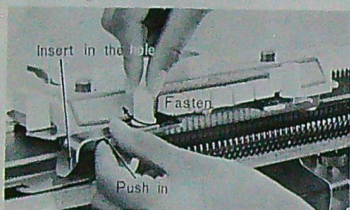


Fig. 2

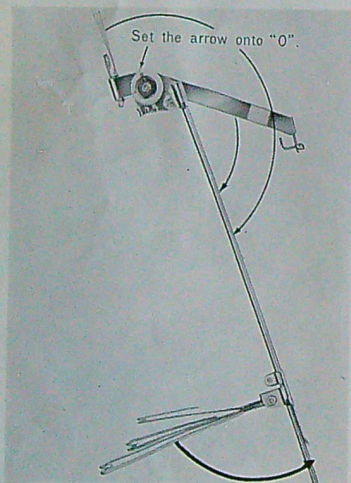


Fig. 3

1. Release all needle selector buttons by pushing down the "O" button. Set the reverse lever onto "A" and push back all needles in position "A" (resting position) (See Fig. 1)

2. Remove the sinker plate and handle from the carriage.

3. Take out the carriage lock from the accessory box and lock the carriage on the left end of the needle bed.

(See Fig. 2)

[Note:] The row counter tripper must be positioned in operation.

4. Replace the automatic yarn tension unit.

Turn the locating knob at the left side of the unit and set the red arrow at 'O'. Hold up the front yarn guide arm and take up springs and rear yarn guides. (See Fig. 3)

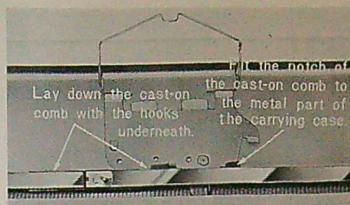


Fig. 4

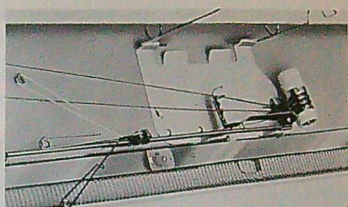


Fig. 5

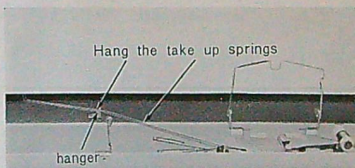


Fig. 6



Fig. 7

5. Replace the cast on comb, automatic yarn tension unit and sinker plate assembly inside of the upper carrying case.

a. Open the springs and replace the cast on comb in the upper case. (See Fig.4)

b. Replace the automatic yarn tension unit as shown in Fig.5.

c. Hang the top parts of the take up springs on the hook of upper case. (See Fig.6)

d. Replace the sinker plate assembly in the upper case.
Close the large spring.
(See Fig.7)



Fig. 8

- e. Close the small springs.
(See Fig.8)

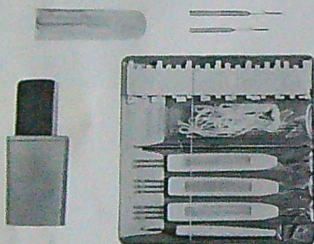


Fig. 9

6. Replace the accessories in the accessory box.

Remove the accessory stand, row counter, set lever, table clamps and replace them in the accessory box.

Replace the hand brush, handle, oil bottle, laying-in pattern weights in the box. (See Fig.9)

7. Replace the small tools in the accessory kit. (See Fig.9)

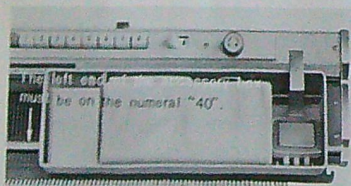


Fig. 10

8. Replace the accessory kit in the accessory box, and place the box on the right side of the needle bed.

- a. The left end of the accessory box must be placed on the line of the number "40" of the needle.
(See Fig.10)

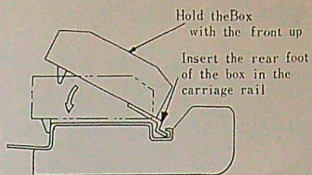


Fig. 11

- b. The metal foot of the accessory box must be fitted into the rail of the needle bed. (See Fig. 11)

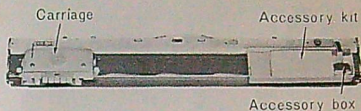


Fig. 12



Fig. 13

9. Close the upper carrying case on the knitter.
(See Fig. 12, 13, 14 and 15.)



Fig. 14

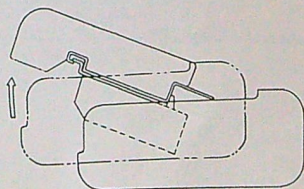
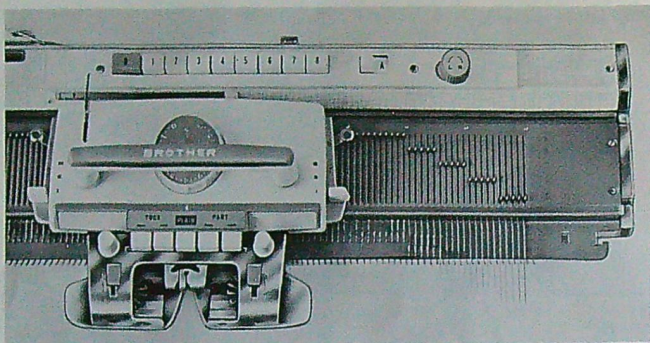


Fig. 15

- Lock the two catches on the carrying case.

INFORMATION BEFORE KNITTING



● Position of needles in the needle bed.

On the both side of needle bed, there are mark A, B, C, D and E.
These marks show the positions of needles.

A position (Out of Action)

The needles are fully back and the carriage, no matter what is done to the control, will not move the needles in any way.

B Position (In Action)

In this position the needle have been pushed out about half-an-inch. The needle hooks are nearly level with the gate pegs. This position is called generally as the "Normal knitting Position)

C Position

This position is used for multi-colour knitting

D Position

This position is same as the selected position by set lever.

Manually, this position is used for shaping (increasing and decreasing) of knitting.

E Position (Holding)

This position is used for holding pattern and partial knitting.

● Pattern selector buttons.



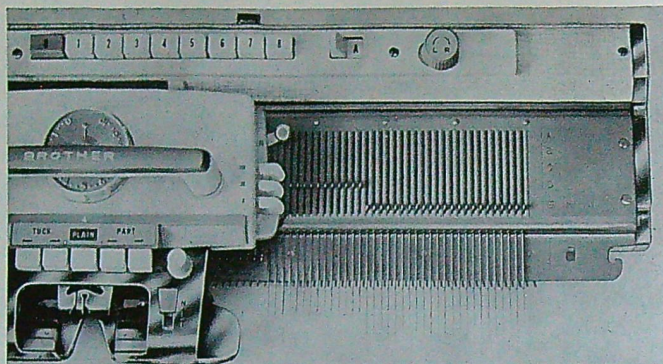
The pattern selector buttons on the carriage, control the needles in position B and C.

The center button marked "Plain" if push in, acts as a release for all other. When all five are even, you get plain knitting (stockinette stitch) (See Fig. 2)

Position of Needles	Setting of Pattern Selector Buttons	When carriage is moved
B	PLAIN ⇄	Plain knitting Left course Plain knitting Right course
	TUCK ⇄	Tucking Left course Plain knitting Right course
	TUCK ⇄	Plain knitting Left course Tucking Right course
	TUCK ⇄ ⇄	Tucking Left course Tucking Right course
	PART ⇄	Stationary Left course Plain knitting Right course
	PART ⇄	Plain knitting Left course Stationary Right course
	PART ⇄ ⇄	Stationary Left course Stationary Right course
	TUCK ⇄ PART ⇄	Tucking Left course Stationary Right course
	PART ⇄ TUCK ⇄	Stationary Left course Tucking Right course

Fig. 2

● Holding cam levers



Holding cam levers have three positions I, II and III and control the needles in position D and E on what is known as the "Knitting Side" of the carriage. (See Fig. 3)

Position of needles	Position of holding cam lever	When carriage is moved
D	III	Needle are raised up to position "E". (Holding)
	II	Knitting (Needles are moved back to position "B".)
	I	Knitting (")
E	III	Needles are stationary in position "E". (Holding)
	II	"
	I	Knitting (Needles are moved back to position "B".)

Fig. 3

[Note]

When Laying-in cam levers are positioned in "T", holding cam levers can not be set in position "III". When you want to set the holding cam levers in position "III" the laying-in cam levers must be in position "N".

● Tension Dial

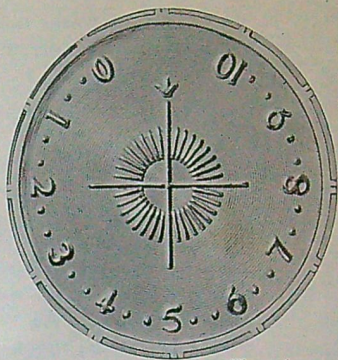


Fig. 4

Tension in knitting denotes the size of the stitch. The tension dial which is graduated from 0 to 10 and sub-divided into third. The figure 0 denotes the tightest tension, i. e. the smallest stitch and the 10, the loosest or largest stitch.

As the tension at which a garment is knitted depends not only on personal taste but also on the type of garment required and the thickness of the yarn. (See Fig. 4)

● Push button pattern keys.

The push button patterning system is the most revolutionary features of this knitter. Multicolour and textured designs now become really automatic and the push buttons in conjunction with the pattern selector button and the holding cams can produce most intricate designs effortlessly. (See Fig. 5)

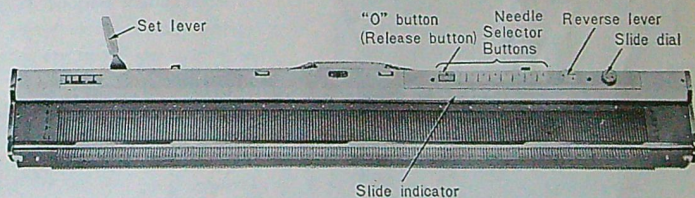


Fig. 5

● Exercise of Needle Selection.



Fig. 6

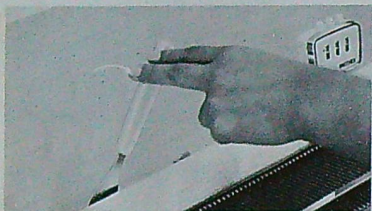


Fig. 7

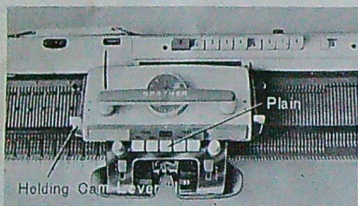


Fig. 8



Fig. 9

- (1) Raise up about 50 needles from the position "A" to position "B".
- (2) Push down the "1" button. (See Fig. 6)
(In actual knitting, the required button or combination of buttons for patterns are pushed)
- (3) Swivel the set-lever to the right as far as it will go, then the corresponding needles will be raised up to position "D". (See Fig. 7)
- (4) Move the carriage with setting for plain knitting
pattern selector button : Plain
holding cam levers : Position I
Then, all needles will back to position "B". See (Fig. 8)
(In actual pattern knitting, the required pattern selector button and holding cam levers are set for pattern)
- (5) Swivel the set lever again, the same needle's group will be raised up.
- (6) Push down the "0" button, then the button "1" will be released. (See Fig. 9)

● Needle selector buttons

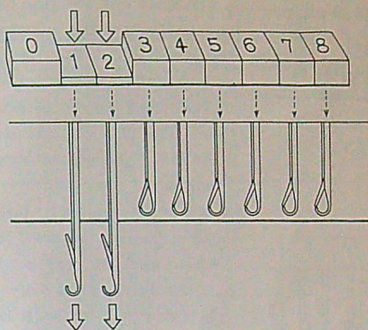


Fig. 10

There are eight needle selector buttons, i.e. "1", "2", "3", "4", "5", "6", "7", and "8".

Each button action to each needle group, then the combination of the pushed down buttons will give the same combination of selected needles. There are 34 basic combinations of buttons.

By adding the operation of slide dial and reverse lever, each basic combination will be changed in many variations. (See Fig. 10)

● Reverse lever

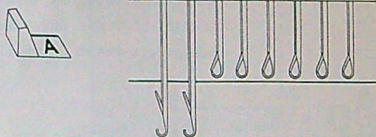


Fig. 11

The reverse lever has two positions "A" and "B".

Position "A" : The needles correspond with the pushed down buttons are selected by swivel of the set lever. Position "B" : The needles correspond with the unpushed down buttons are selected by swivel of the set lever.

Therefore, by using the reverse lever, needle selection in multicolor knitting is very simple.

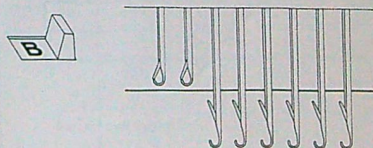


Fig. 12

● Slide dial and slide indicator

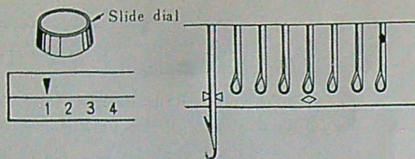


Fig. 13

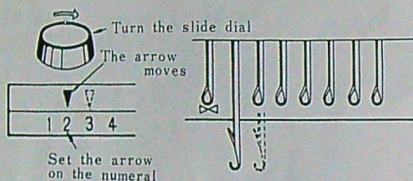


Fig. 14

The slide dial are used for sliding of the needle selection and very useful for zigzag patterns and diagonal patterns.

- (1) Push down the "1" button, turn the slide dial and set the arrow at 1 on the slide indicator.

Swivel the set lever, then the needles on the mark \boxtimes will be selected. (See Fig. 13)

- (2) Turn the slide dial and set the arrow at 2 on the slide indicator.

Swivel the set lever, then the needles on right side of the mark \times will be selected. (See Fig. 14)

Relations between the needle selector buttons and the needles are shown in Fig. 15.

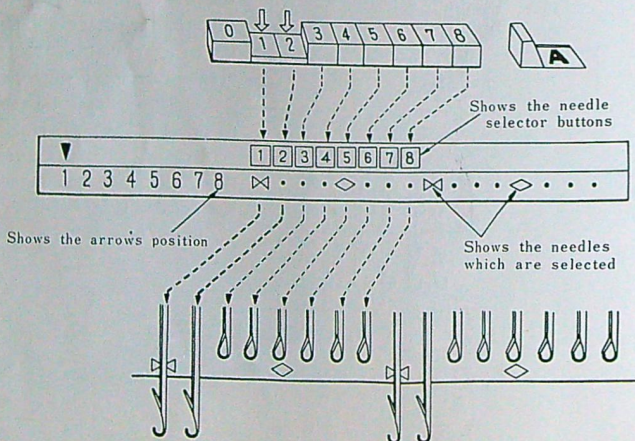


Fig. 15

● Basic Needle Selection

Numbers of Pushed down buttons	Symbols of Needle Selection	○ means the pushed down buttons																No of variation by slide dial
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	
1	$\frac{1}{7}$	1	○							○								8
2	$\frac{2}{6}$	2	○	○						○	○							8
		3	○		○					○		○						8
		4	○			○				○			○					8
	$\frac{1}{3}$	5	○				○			○				○				4
3	$\frac{3}{5}$	6	○	○	○					○	○	○						8
		7	○	○		○				○	○		○					8
		8	○	○			○			○	○			○				8
		9	○	○				○		○	○				○			8
		10	○	○					○	○	○					○		8
		11	○		○		○			○		○		○				8
		12	○		○			○		○		○			○			8
4	$\frac{4}{4}$	13	○	○	○	○				○	○	○	○					8
		14	○	○	○		○			○	○	○		○				8
		15	○	○	○			○		○	○	○			○			8
		16	○	○	○				○	○	○	○				○		8
		17	○	○		○	○			○	○		○	○				8
	$\frac{2}{2}$	18	○	○			○	○		○	○			○	○			4
		19	○	○		○		○		○	○		○		○			8
		20	○	○			○		○	○	○			○		○		8
		21	○	○		○			○	○	○		○			○		8
	$\frac{1}{1}$	22	○		○		○		○		○		○		○		○	2
5	$\frac{5}{3}$	23	○	○	○	○	○			○	○	○	○	○				8
		24	○	○	○	○		○		○	○	○	○		○			8
		25	○	○	○	○			○	○	○	○	○			○		8
		26	○	○	○		○	○		○	○	○		○	○			8
		27	○	○	○			○	○	○	○	○			○	○		8
		28	○	○	○		○		○	○	○	○		○		○		8
		29	○	○		○	○		○	○	○		○	○		○		8
6	$\frac{6}{2}$	30	○	○	○	○	○	○		○	○	○	○	○	○			8
		31	○	○	○	○	○		○	○	○	○	○	○		○		8
		32	○	○	○	○		○	○	○	○	○	○		○	○		8
	$\frac{3}{1}$	33	○	○	○		○	○	○	○	○	○		○	○	○		4
7	$\frac{7}{1}$	34	○	○	○	○	○	○	○	○	○	○	○	○	○	○		8

● Picker

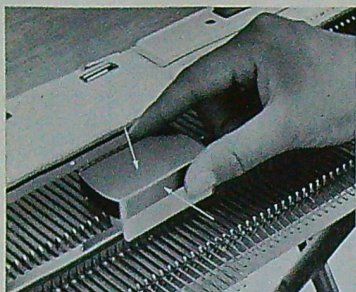


Fig. 16

Picker is used for the changing of needle positions, i.e. from E or D to D or C.

(1) Put the picker with the foot towards you on the front rail of the needle bed. (See Fig. 16)

(2) Raise up the needles to position "E".

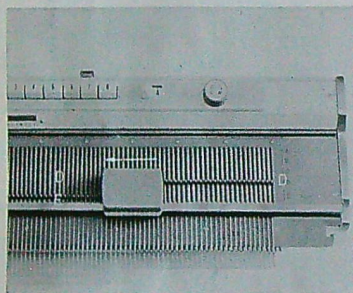


Fig. 17

(3) Slide the picker across the needles in position "E" from right to left.

(4) The needles in position "E" will move back to position "D". (See Fig. 17)

(5) Slide the picker across the needles in position "D" from left to right.

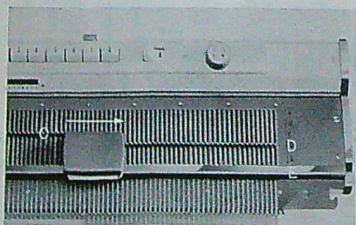


Fig. 18

(6) The needles in position "D" will move back to position "C". (See Fig. 18)

● Laying-in saddle

The laying-in saddle is used for laying-in pattern knitting. The fabric of laying-in patterns are non-elastic and look like clothes.

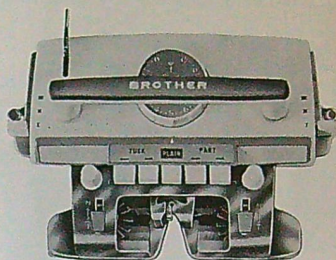


Fig. 19

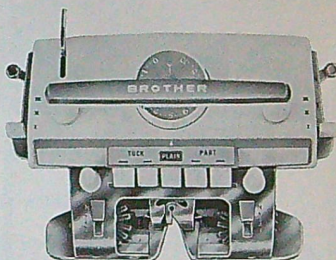


Fig. 20

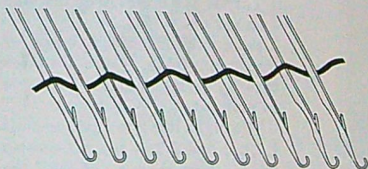


Fig. 21

Setting of carriage for laying-in pattern knitting

laying in levers : T

knobs of laying-in brushes : T

(See Fig. 19)

Setting of carriage for other patterns and plain knitting

laying in levers : N

knobs of laying-in brushes : N

(See Fig. 20)

In the middle steps of laying-in patterns you can use the carriage with same arrangement as laying in patterns.

The principle of the laying in pattern knitting

(1) Lay across the thread upside and underneath of the needle's stems mutually. (See Fig. 21)

(2) Knit by carriage with the other yarn in the yarn feeder.

The laying-in saddle works the step (1) automatically.

(1) Push down the needle selector buttons "1", "3", "5" and "7", and swivel the set lever.

(2) Lay across the thread on the stems of selected needles.

(3) Move the carriage with the other yarn in the yarn feeder.

(See Fig. 21)

PREPARING TO KNIT (Plain knitting)

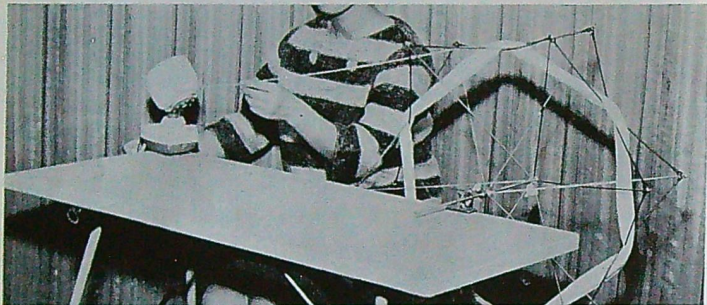
1. Preparing of yarn.

There are two methods.

- a) Prepare the yarn by piling it loosely into a box or tray in order to prevent the knitting from being uneven.
- b) Wind the yarn in ball with "Ball Winder" and "Skein Holder".

Take out the first yarn end which is in the groove of the yarn winder stud.

It is important that the yarn feeds freely as any pull or interference of the yarn affects the smooth even motion of the carriage, resulting in uneven stitches at the edges of the knitting.



2. How to thread the automatic yarn tension unit.

Thread the yarn as following Fig. 2.

- a) Thread in the rear yarn guide. ①
- b) Through the front of the yarn guide ② and thread between the discs ③.
- c) Thread the front yarn guide ④.
- d) Thread the eyelet ⑤ of the take up spring.

Yarn clip is used for rest of inoperating yarn. There are three take up springs and they are able to pull out.

The right side knob has numerals 1, 2, 3, 4 and 5. The figure 1 denotes the weakest tension and the 5 the strongest tension. Weak tension is suitable to thick yarn and strong tension is suitable to thin yarn.

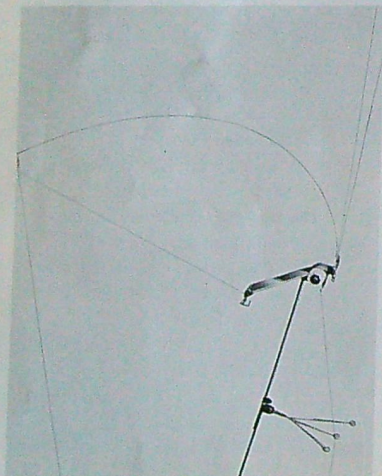


Fig. 1

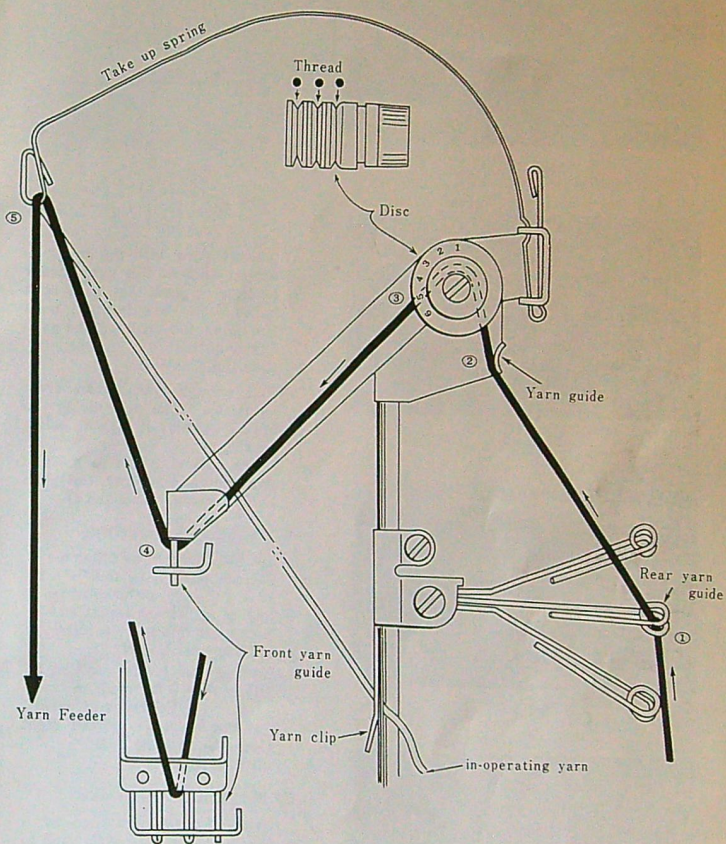


Fig. 2

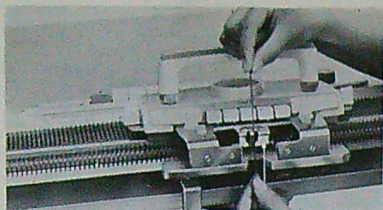


Fig. 4



Fig. 5



Fig. 6



Fig. 7

3. How to thread in the yarn feeder.

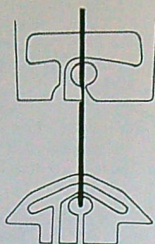


Fig. 3

- a) Thread yarn into the key hole shaped slits of the yarn feeder by holding yarn taut with both hands, pull back into slit until you hear the click of the yarn holder spring.

(See Fig. 3 and 4)

- b) Pull enough yarn down from automatic take up spring to extend about 8 inches below carriage.

When removing the yarn, pull yarn down and over the yarn holder spring. (See Fig. 5)

4. Pushing the carriage

Set the carriage as follows.

Pattern selector button;

plain knitting

Laying in pattern levers and Knobs for laying in pattern brushes; position N

Holding cam levers; position I

Stitch dial; 7 for medium thickness of yarn

Put the carriage on the right side of the needle bed;

(See Fig. 6)

5. Preparing the needles

Using the straight edge of a needle pusher, bring forward to position "B", or about $\frac{1}{2}$ " from the resting position "A", the desired number of needles.

(See Fig. 7)

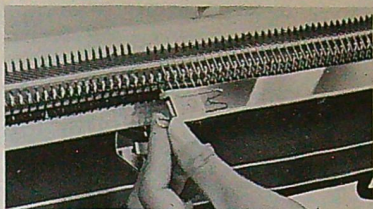


Fig. 8

6. How to hang the cast on comb.

- 1) Hold comb centered to the edge of the needle bed with the wire hooks of the comb facing you.
- 2) Turn securing lever A at both ends to face you. (See Fig.10)
- 3) Place hooks between pegs of needle bed as far as possible. (See Fig.9)
- 4) Turn the two securing lever A outwards to the right and left respectively and cast on comb will hang correctly on the machine. The comb should be hung in front of the needles to be knitted so that the central needles is central to the comb.

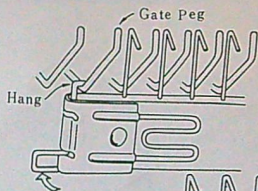


Fig. 9

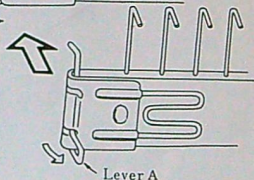


Fig. 10

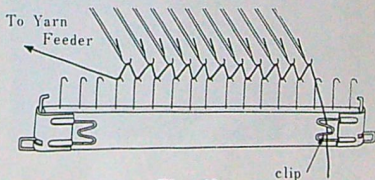


Fig. 11

9. Start to knit (Casting-on)

- 1) Move the threaded carriage slowly. This will cause loops to be picked up in the needles hooks and to form around the gate pegs and the hooks of the cast on comb.

Continue the carriage movement until the carriage clear the cast on comb.

If the end near needles come up from the line of other threaded needles, push back them with fingers.

- 2) Carefully unhook the comb from the pegs by turning the securing levers A of the cast-on comb and let the cast-on comb hang in the loops of yarn. (See Fig.11)
- 3) Turn the loose end of the yarn round the cast-on comb clip to keep it out of the way and to secure the first stitch. (See Fig. 11)

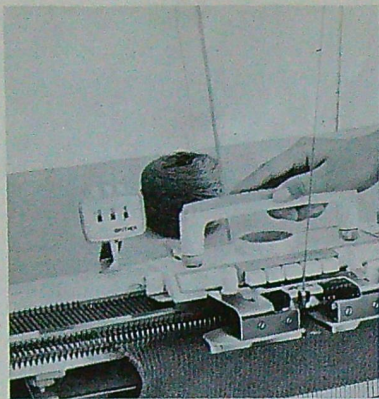


Fig. 12

9. Waste knitting or loose course knitting. (Plain stitch knitting)

To obtain the garment with beautiful edge, waste knitting is used before the knitting of the garment. After waste knitting with waste yarn is finished, knit one row with the threaded carriage of the cast-on thread, before the garment knitting with yarn for it.

When finished the garment knitting, by pulling out the cast-on thread, the garment and the waste knitting can be divided.

8. Knitting (Plain knitting)

After casting-on, set the stitch dial onto 5 for the medium thickness of yarn.

Move the carriage from left to right and continue knitting. Move the carriage at an even speed and listen for a click at the end of each row. (See Fig. 12, 13)

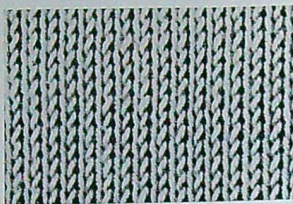


Fig. 13

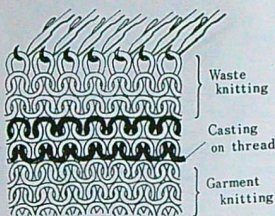
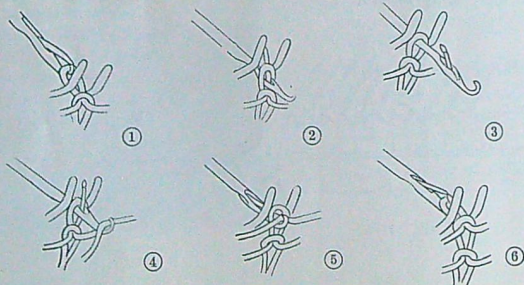


Fig. 14

● The principle of the stitch forming.



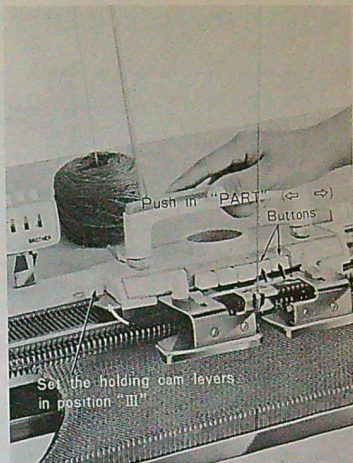


Fig. 15

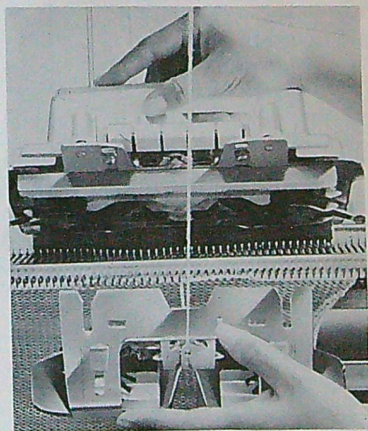


Fig. 16

● Carriage movement without knitting.

It is necessary to move the carriage without knitting over the needles which are in operation from one side of knitting to the other side.

Simple method, slide off the carriage from the needle bed and slide in the carriage on the needle bed from the other side.

Second method, push the 2 pattern selector button to "PART", set the holding cam levers in position III. Then the carriage will slide over the needles which are in operation without knitting.

This method is also useful for multicolor knitting.

(See Fig. 15)

● To unlock the carriage

In the event of the carriage jamming in the course of normal knitting, the following steps will quickly free it.

- a. Loosen the thumb screws of the sinker plate, remove the sinker plate from the carriage.
- b. Grip the handle of the carriage and lift up the front of the carriage. (see Fig.16)
- c. Slide the carriage to the side where the row commenced and when free of needles lower the front onto the needle bed.
- d. Attach the sinker plate to the carriage and fasten the thumb screws of the sinker plate securely.
- e. Unravel last row of knitting, and if necessary rethread carriage feeder.
- f. Adjust the numbers on the row counter.

● Undoing rows (unrabbelling)

If you have knitted more rows than necessary, do not remove work from the knitter.

Simply unrabbell one or several rows by doing the following.

(See Fig.17)

Pull the yarn slightly, drawing it out of stitches. The stitches of the previous row will slip into the hooks of needles automatically as the yarn is raised in an upward movement towards the needle bed.

Move the carriage in either direction without knitting.

Pull the ripped yarn down through the back of the rear yarn guide until the yarn take up spring is brought back into operation.

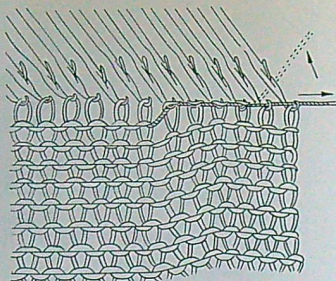


Fig. 17

● How to lock the knitting on the needle bed.

Lay across the cast-on thread over the needles in operation between the hooks and the gate pegs (See Fig.18.)

Hold the both ends of cast on thread knit one row with the threaded carriage. Now, the knitting work are located.

This method is useful for the discontinuance of knitting.

When you want to knit again, pull off the cast-on thread from one side, unravel one row and start to knit again.

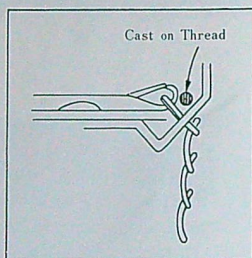


Fig. 18

● How to remove the knitting from the knitter

- Take the yarn out of the yarn feeder on the carriage.
- Press the work against the needle bed and slide the carriage twice across the needles in action.
- The work will be released.

PATTERN KNITTING BY PUSH BUTTON PATTERN KEYS

[illegible]

● How to read the pattern knitting table.

The following pattern knitting are shown by the pattern knitting table.

The underneath column shows the operating part of the knitter.

Steps From the underneath of the table in order of numerals, operate the knitter. The required operation in the step, is shown in the lateral column of the step.

Direction of the carriage movement

..... Move the carriage according to the direction of arrow.

Before the step 1, place the carriage in the right side on the needle bed.

Colour of yarn

..... Shows the colour of yarn in the yarn feeder.

Main color : A

Sub color : B, C

Figure "○" means the movement of the carriage without knitting.

Tension Dial : shows the tension No. of the Dial. The numeral shows the tension No. for medium size yarn.

Carriage : shows the setting of the pattern selector buttons and holding cam levers.

①~⑤ : shows the button to be pushed down and operation of the set lever.

a) ⑤ means the pushing down of button "5" and operation of the set lever.

b) ■ means operation of the set lever without pushing down of button.

c) □ means no operation of the button and the set lever.

Reverse Lever : shows the position of the reverse lever.

Slide Dial : shows the number on slide indicator of the arrow to be set.

Laying in parts : shows the position of the laying in levers and knobs of the brush wheels.

Laying-in thread : shows the color of the laying-in thread



1. Holding Pattern (1)

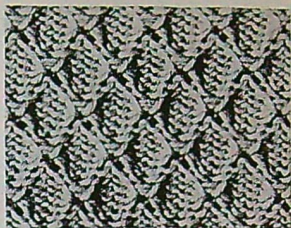
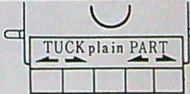




Fig. 1

This pattern is very simple made of the combination of plain and holding stitch.

12	→	"	"	"			"										"	"	"
11	←	"	"	"			"										"	"	"
10	→	"	"	"			"										"	"	"
9	←	"	"	III			"		"	■			■				"	3	"
8	→	"	"	"			"		"								"	"	"
7	←	"	"	I			"		"								"	"	"
6	→	"	"	"			"		"								"	"	"
5	←	"	"	"			"		"								"	"	"
4	→	"	"	"			"		"								"	"	"
3	←	"	"	III			"		"	1				5			"	"	"
2	→	"	"	"			"		"								"	"	"
1	←	A	5	I			■		III								A	1	N

Steps	Direction of Carriage Movement	Color of Yarn	Tension Dial	 Carriage	1	2	3	4	5	6	7	8	 Needle Selection Apparatus	 Laying-in Pattern Apparatus	
															1

How to knit the holding pattern.

It is not necessary to exchange of the yarn, pattern selector button and reverse lever. Knit several rows of plain knitting and rest the carriage on the needle bed apart from knitting

Step 1.

color of yarn : main color
tension dial : 5
holding cam levers : left I, right III
pattern selector button : Plain
needle selector button : 0
reverse lever : A
slide dial : 1

After setting as above, move the carriage from right to left.

Step 2.

Move the carriage to right direction.

Step 3.

Push down needle selector buttons "1" and "5" and swivel set lever.

Change the left holding cam lever from "I" to "III", and move the carriage to left.

Step 4.

Move the carriage to right.

Step 5.

Move the carriage to left.

Step 6.

Move the carriage to right.

Step 7.

Reset the left holding cam lever onto "I", move the carriage to left.

Step 8.

Move the carriage to right.

Step 9.

Turn the slide dial and set the arrow onto 3 on the slide indicator.

Swivel the set lever. Change the left holding cam lever from "I" to "III".

Move the carriage to left.

Step 10.

Move the carriage to right.

Step 11.

Move the carriage to left.

Step 12.

Move the carriage to right.

Turn the slide dial and set the arrow to "1" on the slide indicator.

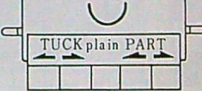
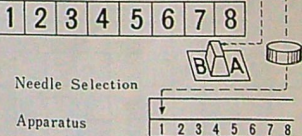

Repeat from step (1)~(12)

2. Holding pattern (2)



Fig. 2

Leave the needles on the mark \times and \diamond in the position "A". Raise up other needles in the position "B".

12	→	//	//	//			//			//	×				×			//	//	//
11	←	//	//	I			//			//	×				×			//	//	//
10	→	//	//	//			//			//	×				×			//	//	//
9	←	//	//	//			//			//	×				×			//	//	//
8	→	//	//	//			//			//	×				×			//	//	//
7	←	//	//	III			//			//	×				×			//	5	//
6	→	//	//	//			//			//	×				×			//	//	//
5	←	//	//	I			//			//	×				×			//	//	//
4	→	//	//	//			//			//	×				×			//	//	//
3	←	//	//	//			//			//	×				×			//	//	//
2	→	//	//	//			//			//	×				×			//	//	//
1	←	A	6	III						III	×			3	×			A	1	N
Steps	Direction of Carriage Movement	Color of Yarn	Tension Dial													Laying-in Pattern Apparatus				

3. Continuous holding pattern

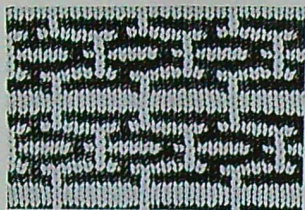


Fig. 3

By using the picker, continuous holding patterns are made easily. The mark "Picker →" in the table, means that in this step, picker is moved from left to right (carriage is on the right side) and down the needles to position "C".

18	→	"	"	"			"		"							"	"	"
17	←	"	"	"			"		"							"	"	"
16	→	"	"	"			"		"							"	"	"
15	←	A	"	I			"		"							"	"	"
14	→	"	"	"			"		"							"	"	"
13	←	B	"	"			"		"							"	1	"
12	→	"	"	"			"		"							"	"	"
11	←	A	"	"			"		"							"	3	"
10	→	"	"	"			"		"							"	"	"
9	←	B	"	"			"		"							"	5	"
8	→	"	"	"			"		"							"	"	"
7	←	A	"	"			"		"							"	7	"
6	→	"	"	"			"		"							"	"	"
5	←	B	"	"			"		"							"	5	"
4	→	"	"	"			"		"							"	"	"
3	←	A	"	"			"		"							"	3	"
2	→	"	"	"			"		"							"	"	"
1	←	B	5	III					III	1						A	1	N

TUCK plain PART

Carriage

1 2 3 4 5 6 7 8

Needle Selection Apparatus

1 2 3 4 5 6 7 8

Laying-in Pattern Apparatus

1 2 3 4 5 6 7 8

4. Tucking pattern



Fig. 4

[illegible]

5. Whole tucking pattern

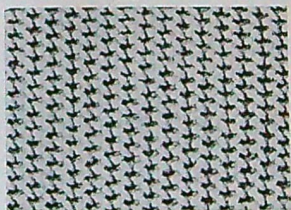

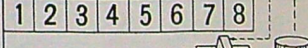
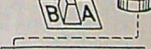


Fig. 5

2	→	"	"	"	"	"			"						B	"	"	
1	←	A	5	I					I	1		3		5		7	A 1 N	
Steps	Direction of Carriage Movement	Color of Yarn	Tension Dial															
				Carriage						Needle Selection Apparatus								
																		
						Laying-in Pattern Apparatus												

6. Holding and tucking pattern

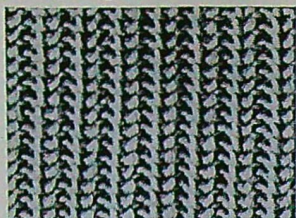
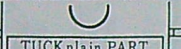
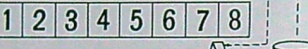


Fig. 6

2	→	"	"	"		"			"							"	"	"	
1	←	A	7	III					I	1		3		5		7		A 1 N	
Steps	Direction of Carriage Movement	Color of Yarn	Tension Dial																Laying-in Pattern Apparatus

7. Lace like pattern

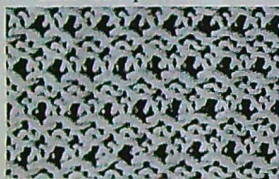


Fig. 7

8	→	"	"	"		"		"							"	"	"
7	←	"	4	"				"							"	"	"
6	→	"	"	"	"			"	"						A	"	"
5	←	"	9	"				"							"	"	"
4	→	"	"	"		"		"							"	"	"
3	←	"	4	"				"							"	"	"
2	→	"	"	"	"			"	"						B	"	"
1	←	A	9	I				I		1	3	5	7		A	1	N

TUCK plain PART

Carriage

Steps

Direction of Carriage Movement

Color of Yarn

Tension Dial

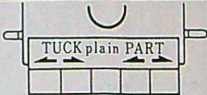
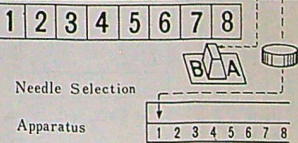
Needle Selection Apparatus

Laying-in Pattern Apparatus

8. Fair Isle pattern (1)

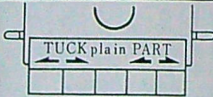
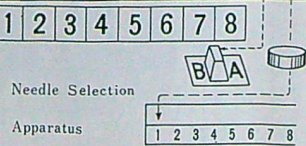



Fig. 8

16	→	"	"	"				"	"	"							"	"	"	
15	←	A	"	"				"	"	"							A	"	"	
14	→	"	"	"				"	"	"							"	"	"	
13	←	B	"	"				"	"	"							B	"	"	
12	→	"	"	"				"	"	"							"	"	"	
11	←	A	"	"				"	"	"							A	"	"	
10	→	"	"	"				"	"	"							"	"	"	
9	←	B	"	"				"	"	"							"	"	"	
8	→	"	"	"				"	"	"							"	"	"	
7	←	A	"	"				"	"	"							B	"	"	
6	→	"	"	"				"	"	"							"	"	"	
5	←	B	"	"				"	"	"							A	"	"	
4	→	"	"	"				"	"	"							"	"	"	
3	←	A	"	"				"	"	"							B	"	"	
2	→	"	"	"				"	"	"							"	"	"	
1	←	B	7	I				I	1	2							5	6	A 1 N	
Steps	Direction of Carriage Movement	Color of Yarn	Tension Dial																	Laying-in Pattern Apparatus
				Carriage				Needle Selection Apparatus												

9. Fair Isle pattern (2)

24	→	○	"	"				"	"	"								"	"	"
23	←	A	"	"				"	"	"								B	"	"
22	→	B	"	"				"	"	"				4	5	6		A	"	"
21	←	○	"	"				"	"	"								"	"	"
20	→	A	"	"				"	"	"								B	"	"
19	←	B	"	"				"	"	"			3	4		6	7	A	"	"
18	→	○	"	"				"	"	"								"	"	"
17	←	A	"	"				"	"	"								B	"	"
16	→	B	"	"				"	"	"		2	3		5		7	8	A	"
15	←	○	"	"				"	"	"								"	"	"
14	→	A	"	"				"	"	"								B	"	"
13	←	B	"	"				"	"	"	1	2		4	5	6		8	A	"
12	→	○	"	"				"	"	"								"	"	"
11	←	A	"	"				"	"	"								B	"	"
10	→	B	"	"				"	"	"		2	3		5		7	8	A	"
9	←	○	"	"				"	"	"								"	"	"
8	→	A	"	"				"	"	"								B	"	"
7	←	B	"	"				"	"	"			3	4		6	7	A	"	"
6	→	○	"	"				"	"	"								"	"	"
5	←	A	"	"				"	"	"								B	"	"
4	→	B	"	"				"	"	"				4	5	6		A	"	"
3	←	○	"	"				"	"	"								"	"	"
2	→	A	"	"				"	"	"								B	"	"
1	←	B	6	I						I	1				5			A	1	N

Steps	Direction of Carriage Movement	Color of Yarn	Tension Dial																	
				Carriage								Needle Selection Apparatus								

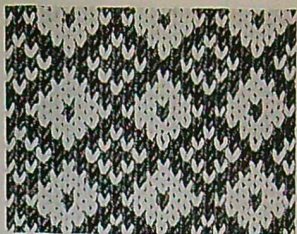


Fig. 9

In the Table, mark ○ means the carriage movement without knitting.

10. Multicolour Fair Isle pattern



Fig. 10

This pattern is made by using laying in levers.

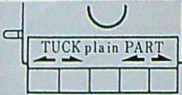
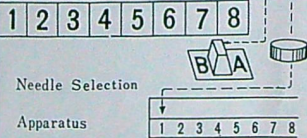
- (1) Push down the needle selector buttons and swivel the set-lever.
Move the picker from right to left, then the needles with stitches come up to position "E" and down to position "D". Stitches hang on the stems of needles.
- (2) Press the work towards knitter, raise up the un-selected needles to position "E"

manually.

- (3) Lay across the yarn of color B in the open hooks of needles which are in the position "D".
- (4) Pulling the color B yarn by hand, knit the carriage with carriage with color A yarn.

The needles in position "D" make stitches of color B and the needles in position "E" make the stitches of color A.

All steps require the operation described as above after needle selection.

26	→	"	"	"				"									"	"	"
25	←	"	"	"				"									"	"	"
24	→	"	"	"			"	"									"	"	"
23	←	"	"	"			■	"									"	"	"
22	→	"	"	"			"	"	"	■	■	■					"	1	"
21	←	"	"	"			"	"	"	■	■	■					"	2	"
20	→	"	"	"			"	"	"	■	■	■					"	3	"
19	←	"	"	"			"	"	"	■	■	■					"	4	"
18	→	"	"	"			"	"	"	■	■	■					"	5	"
17	←	"	"	"			"	"	"	■	■	■					"	4	"
16	→	"	"	"			"	"	"	■	■	■					"	3	"
15	←	"	"	"			"	"	"	■	■	■					"	2	"
14	→	"	"	"			■	■	"	■	■	■					"	1	"
13	←	"	"	"			"										"	"	"
12	→	"	"	"			"										"	"	"
11	←	"	"	"			"										"	"	"
10	→	"	"	"			■										"	"	"
9	←	"	"	"			"	"	"	■	■	■					"	1	"
8	→	"	"	"			"	"	"	■	■	■					"	2	"
7	←	"	"	"			"	"	"	■	■	■					"	3	"
6	→	"	"	"			"	"	"	■	■	■					"	4	"
5	←	"	"	"			"	"	"	■	■	■					"	5	"
4	→	"	"	"			"	"	"	■	■	■					"	4	"
3	←	"	"	"			"	"	"	■	■	■					"	3	"
2	→	"	"	"			"	"	"	■	■	■					"	2	"
1	←	A	6	I			■	■	I	1	2	3					A	1	T
Steps	Direction of Carriage Movement	Color of Yarn	Tension Dial	 Carriage						 Needle Selection Apparatus								Laying in Pattern Apparatus	

11. Zigzag pattern

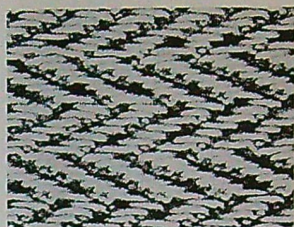

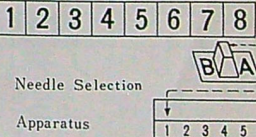



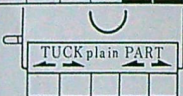
Fig. 11

14	→	"	"	"				"	"	"							"	2	..	
13	←	"	"	"				"	"	"							"	3	"	
12	→	"	"	"				"	"	"							"	4	"	
11	←	"	"	"				"	"	"							"	5	"	
10	→	"	"	"				"	"	"							"	6	"	
9	←	"	"	"				"	"	"							"	7	"	
8	→	"	"	"				"	"	"							"	8	"	
7	←	"	"	"				"	"	"							"	7	"	
6	→	"	"	"				"	"	"							"	6	"	
5	←	"	"	"				"	"	"							"	5	"	
4	→	"	"	"				"	"	"							"	4	"	
3	←	"	"	"				"	"	"							"	3	"	
2	→	"	"	"				"	"	"							"	2	"	
1	←	A	7	I						I	1	2			5	6		A	1	N
Steps	Direction of Carriage Movement	Color of Yarn	Tension Dial																	
				Carriage				Needle Selection Apparatus								Laying-in Pattern Apparatus				

12. Colored zigzag pattern (See Fig. 12)

24	→	"	"	"			"	"	"								"	"	"
23	←	A	"	"			"	"	"		2		4			8	"	"	"
22	→	"	"	"			"	"	"								"	"	"
21	←	B	"	"			"	"	"	1		3					"	"	"
20	→	"	"	"			"	"	"								"	"	"
19	←	A	"	"			"	"	"		2		4			8	"	"	"
18	→	"	"	"			"	"	"								"	"	"
17	←	B	"	"			"	"	"	1		3					"	"	"
16	→	"	"	"			"	"	"								"	"	"
15	←	A	"	"			"	"	"		2		4			8	"	"	"
14	→	"	"	"			"	"	"								"	"	"
13	←	B	"	"			"	"	"	1		3					"	"	"
12	→	"	"	"			"	"	"								"	"	"
11	←	A	"	"			"	"	"				4		6		8	"	"
10	→	"	"	"			"	"	"								"	"	"
9	←	B	"	"			"	"	"				5		7		"	"	"
8	→	"	"	"			"	"	"								"	"	"
7	←	A	"	"			"	"	"				4		6		8	"	"
6	→	"	"	"			"	"	"								"	"	"
5	←	B	"	"			"	"	"				5		7		"	"	"
4	→	"	"	"			"	"	"								"	"	"
3	←	A	"	"			"	"	"				4		6		8	"	"
2	→	"	"	"			"	"	"								"	"	"
1	←	B	7	I					I				5		7		B	1	N

Steps
Direction of Carriage Movement
Color of Yarn
Tension Dial

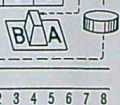


TUCK plain PART

Carriage

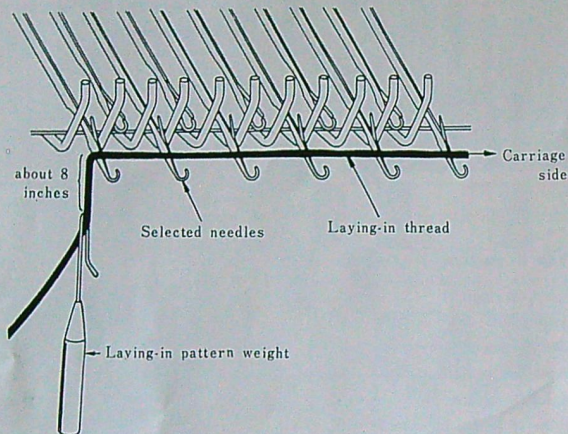
1 2 3 4 5 6 7 8

Needle Selection Apparatus



Laying-in Pattern Apparatus

- (1) (a) Set the reverse lever in position "A" and select the needles.
- (b) On the open hooks of needles, lay across the yarn B with the end of yarn in the same side as the carriage.
- Hang the weight on the laying in yarn B. (See Fig.14)
- (c) Move the carriage from right to left.



- (2) (a) Change the reverse lever from position "A" to "B".
- (b) Just same as above (b).
- (c) Move the carriage from left to right.

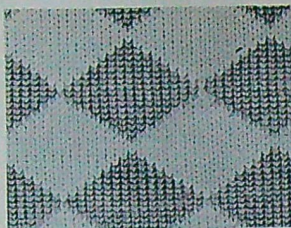


Fig. 18

How to thread in the yarn feeder (See Fig. 19)

Color A : thread in the round holes.

Color B : thread in the long holes.

Setting of Carriage

Pattern selector buttons : Plain

Holding cam levers : 1

Tension Dial

Color A	Color B	Tension dial
medium	medium	9
medium	thin	8
thin	thin	6

How to exchange the colors.

When you want to exchange the color, i.e. to exchange the colors of knit side and purl side, it is not necessary to remove the two yarns and rethread each yarn in the different holes.

There are yarn hangers in both sides of the yarn feeder.

When you want to exchange the color in the next row, hang the color B yarn on the yarn hanger of the knit side; move the carriage you will find the exchanged color knitting.

(See Fig. 20, 21)

● Plating knitting (See Fig. 18)

Plating knitting is that by using the different color yarns to knit, colors of the knitting are different at knit and purl sides.

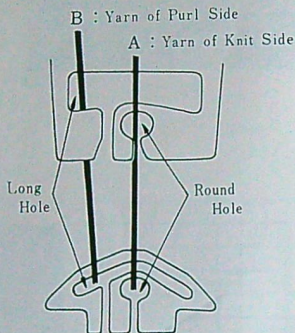


Fig. 19

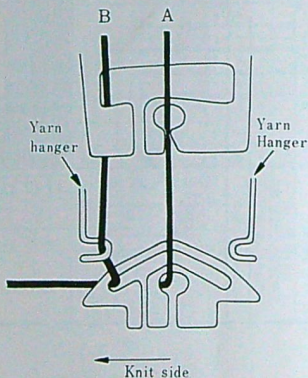


Fig. 20

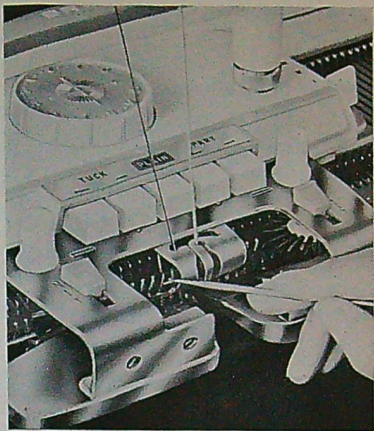


Fig. 21

Continue to knit, you will find the fabric with the every other rows in different color.

17. Plating pattern (See Fig. 22)

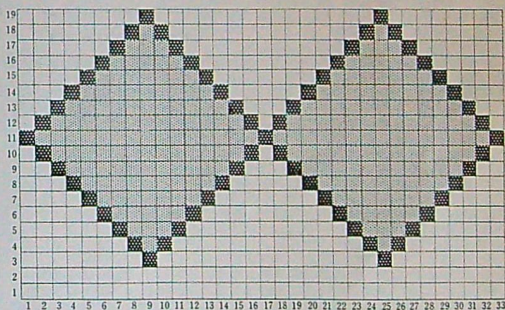


Fig. 22

- (1) Push in the both "PART" buttons on the carriage. Raise up 1~8 needles in position "E".
- (2) Move the carriage.
The 1~8 needles will make color A stitches on knit side, and color B stitches on purl side.
- (3) Move back the carriage.
Raise only 9 needle to position "E".

- (4) Hang the plating yarn B on the yarn hanger of the yarn feeder in the knit side.
Move the carriage.
- (5) Remove the yarn B from the yarn hanger.
- (6) Raise up the 10~24 needles to position "E" and knit them.
- (7) Raise up only 25 needles to position "E".
Hang the yarn B on the yarn hanger in the knit side. Move the carriage.
- (8) Remove the yarn B from the yarn hanger.
- (9) Raise up the 26~33 needles to position "E". and knit them.
- (10) About each row, repeat same steps as above, finish 17 rows.
- (11) After finishing 17 th row, reset the pattern selector button "Plain" and knit 2 rows.

18. Tube knitting

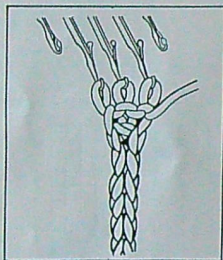


Fig. 23

- (1) Cast-on 3 or 4 needles.
- (2) To get fine finish, use a slightly tight tension.
- (3) Set the carriage.
Pattern selector buttons : PART(←)
Holding cam levers : 1
- (4) Pull down the fabric by left hand, and move the carriage by right hand.

19. Lace or open work pattern

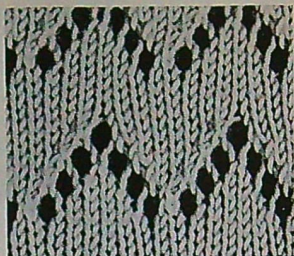


Fig. 24

14																
13																
12																
11																
10																
9																
8	∧	○					○	∧	○							
7																
6		∧	○				○	∧		∧	○					
5																
4			∧	○			○	∧				∧	○			
3																
2					○	∧									○	
1																
	1	2	3	4	5	6	7	8								

Fig. 25

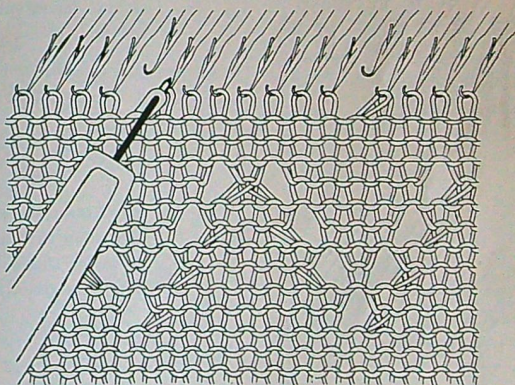


Fig. 26

Knit as shown in Fig. 25

The finished lace pattern will be shown in Fig.24, Fig.26.

To transfer the stitches in this pattern is shown as following.

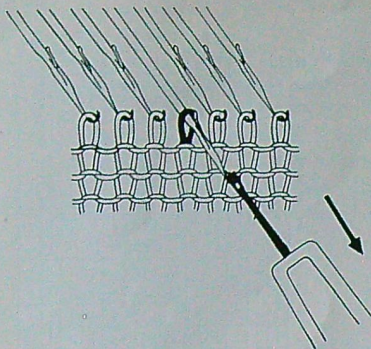


Fig. 27

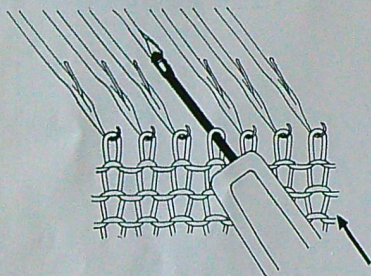


Fig. 28

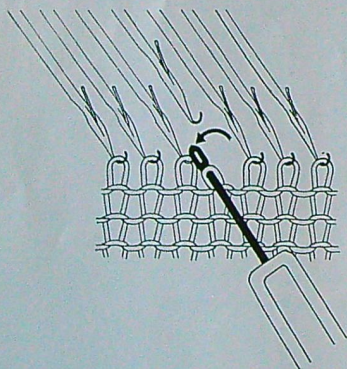


Fig. 29

- (1) Hold the transfer tool parallel with the needle and place the eye of the transfer tool into the hook of the needle. Bring the needle forward. The stitch in the hook of the needle will slide behind the latch and onto the needle. (See Fig. 27)

- (2) Without releasing the transfer tool from the hook of the needles, push the needle all the way back until the stitch is transferred onto the transfer tool. (See Fig. 28)

- (3) Raise the transfer tool with the stitch on it and transfer it to the adjacent needle as shown by arrow.

Note :

If the latches of the needles are opened before transferring, this will speed up the transfer of stitches.
(Use handbrush for opening latches)

20. Cable stitch pattern

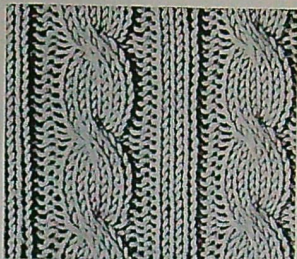


Fig. 30

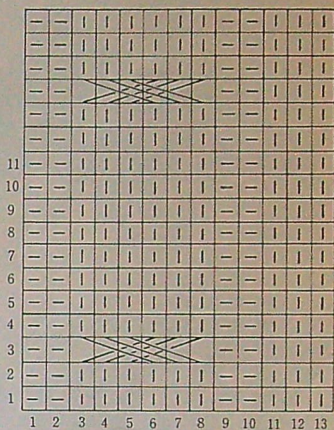


Fig. 31

See Fig. 30.

Knit several rows in plain knitting before transferring the stitch to make cables.

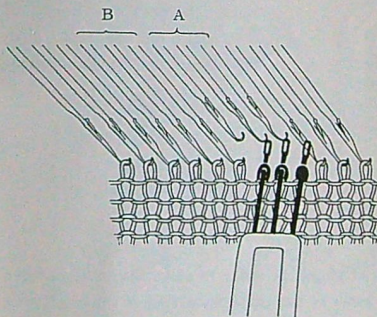


Fig 32

- 1) Using a pair of three eye transfer tools, pick up three stitches with one transfer tool, pick up the adjacent three stitches with the other tool.

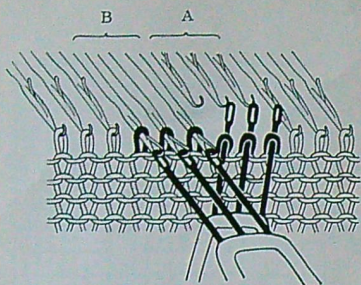


Fig. 33

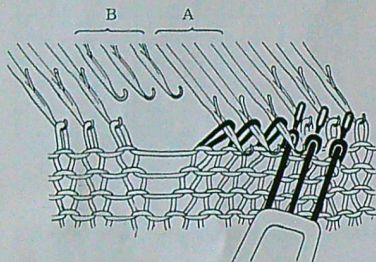


Fig. 34

- 2) Place the three stitches on the tool in your left hand onto the hook of the machine needles on the right. Push the stitches behind the latches.

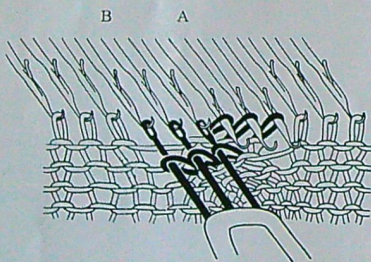


Fig. 35

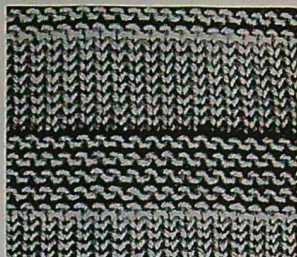
- 3) Place the three stitches on the other transfer tool in your right hand onto the hooks of the needles on the left. Push the stitches behind the latches.

Raise up those six needles to Position "E".

Knit 10 rows.

Repeat (2) (3) (4) (5) and (6) for your required length in order to make the cable pattern clear, rib two or three stitches on both sides of the pattern starting at the beginning of the knitting.

21. Garter stitch pattern



20							
19							
18							
17							
16							
15							
14	-	-	-	-	-	-	-
13							
12	-	-	-	-	-	-	-
11							
10	-	-	-	-	-	-	-
9							
8	-	-	-	-	-	-	-
7							
6	-	-	-	-	-	-	-
5							
4							
3							
2							
1							

The latch tool is used.

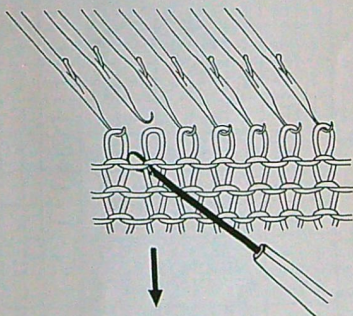


Fig. 36

- (1) Knit two row in Plain stitch. As shown in Fig. 36, insert the latch tool second underneath stitch. Remove the stitch from the needle and shake the latch tool with the stitch on the stem of the latch tool and ladder one stitch.

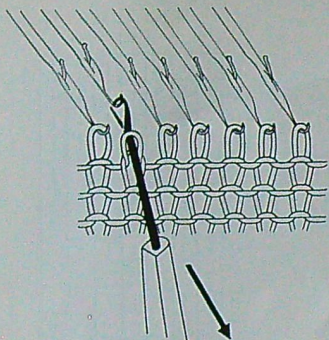


Fig. 37

- (2) Knit one ladder and make one stitch and transfer it on the empty needle. See Fig. 37.

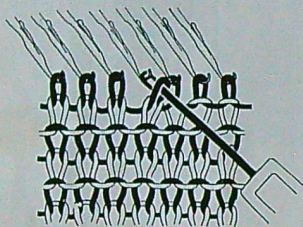
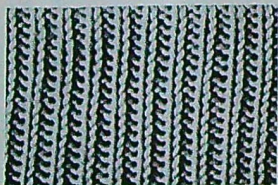


Fig. 38

- (3) Repeat (1) and (2) operation about all stitches on one row. See Fig. 38.

22. Ribbing stitch



	—		—		—		—	
	—		—		—		—	
	—		—		—		—	
	—		—		—		—	
	—		—		—		—	
	—		—		—		—	
	—		—		—		—	
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	—		—		—		—	
	—		—		—		—	

1 2

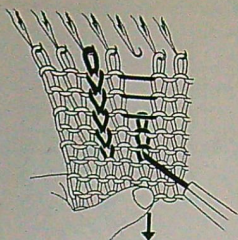


Fig. 39

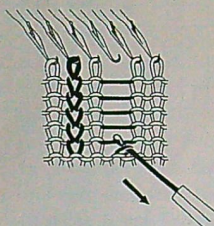


Fig. 40

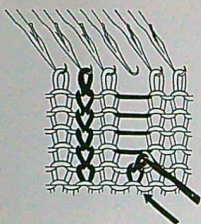


Fig. 41

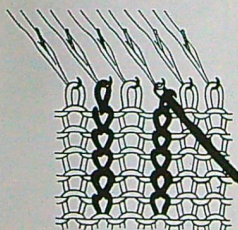


Fig. 42

The latch tool is used. The ribbing is produced by having knit stitch over knit stitch and purl stitch over purl stitch, in vertical lines. The ribbing narrows and lengthens the knitted fabric and increases its elasticity.

It is widely used for waist-bands in sweaters, cuffs, collars, pockets and often for decorative purposes. You can make many variations of ribbing. For example, 1 knit 1 purl, 2 knit 2 purl, 3 knit 1 purl etc. Select any number of combinations of knit and purl to suit your particular requirements.

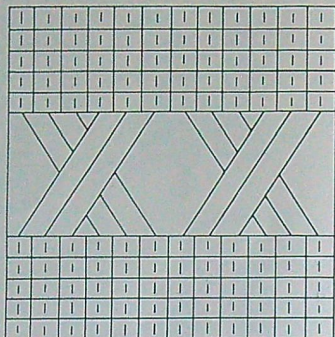
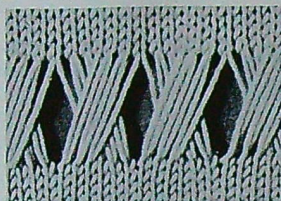
To reverse knit to purl stitches on your knitter; For one knit one purl do the following.

1. Knit as many rows as required for the length of the ribbing on a slightly tighter tension.
2. Drop the third stitch from the end by pushing the needle forward then back until the stitch drops off the needle then, allow the stitch to drop as far down the fabric as you wish. See Fig. 39.
3. Insert the hook of the latch handle into the loop of the last dropped stitch from the front of the fabric. Hold the tool parallel, and see that the stitch is behind the latch.
4. Catch the next parallel thread into the hook, and pull forward until new stitch is formed. See Fig. 40, 41.

Watch the latch of tool, always pick up parallel threads one by one. Note that the last stitch falls behind the latch so that the next parallel thread is in front of the latch.

The push-pull movement soon becomes mechanical. When all parallel threads are picked up, the last stitch is placed back onto the empty needle. In this manner you are reversing your stitch, converting each stitch to purl. Repeat Steps 2,3 and 4 for each row required to be "ribbed". See Fig. 42.

23. Lace cable stitch pattern



Picker and crochet needle are used.

- 1) Make two rings with yarn and hang the cast-on comb on the gate pegs by rings. The distance of the gate pegs and the hooks of the cast-on comb is decided by the length of the cable. (See Fig. 43 and 44)

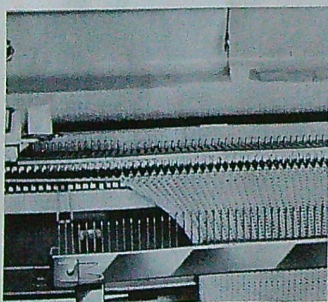


Fig. 43

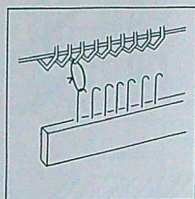


Fig. 44

- 2) Raise up all needles to position "E".

Move the picker from right to left and move back the needles to position "D". (See Fig. 45)

- 3) Remove the yarn from the yarn feeder and lay across the yarn into the hooks and opened latches.

Move the picker from left to right and move back the needles to position "C".

(See Fig. 46)

- 4) By the chrochet hook, catch the yarn that is held in the closed latches and pull down and hang the loop to the hook of the cast on comb.

(See Fig. 47 and 48)

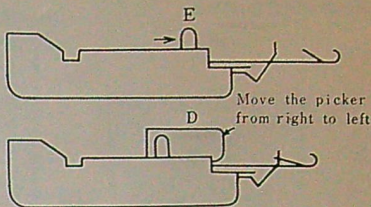


Fig. 45

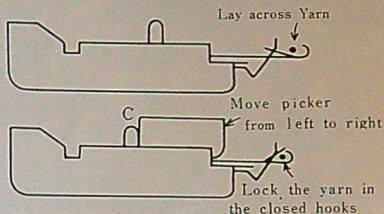


Fig. 46

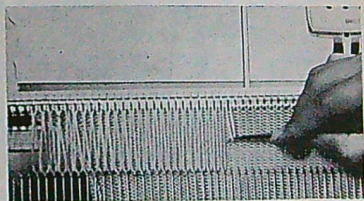


Fig. 47

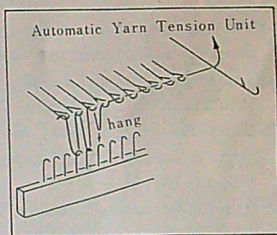


Fig. 48

- 5) After all loops were hanged on the cast-on comb, push in the "PART" (←, →) buttons, and move the carriage and remove the cast-on comb.

- 6) Pull down the fabric underneath, you will get lace cable.

In this step, cross the cable by 2 transfer tools.

- 7) Set the carriage in Plain, thread the yarn in the yarn feeder and knit one row.

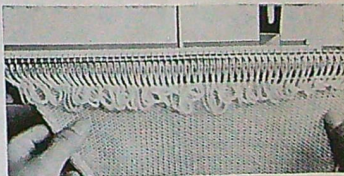
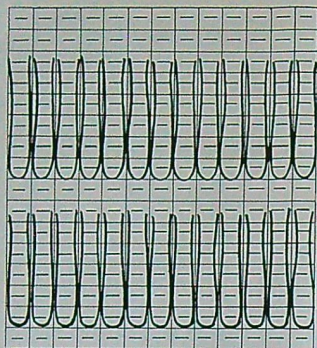
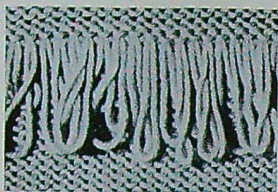


Fig. 49

24. Ring stitch pattern



- 1) Remove the yarn from the yarn feeder and push in "PART" (\leftarrow , \rightarrow) buttons. Transfer the carriage to the opposite side.
- 2) Make two rings and hang the cast-on comb with the hooks toward you, on the gate pegs.
- 3) Raise up the needles to position "E".
Move the picker from right to left and move back the needles to position "D".
- 4) Lay across the yarn in the hooks, move the picker from left to right and move back the needles to position "C".
- 5) Using the crochet hook, hang the yarn to the hook of the cast-on comb.
(See Fig. 50)
- 6) Raise up all needles to position "E" and bring the stitches and loops behind latches of the needles. (See Fig. 51)

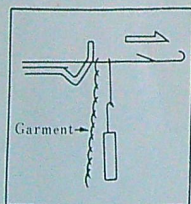


Fig. 51

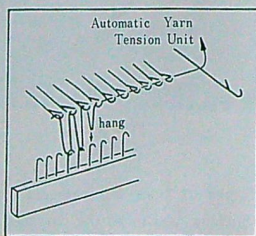


Fig. 50

- 7) Thread the yarn in the yarn feeder and set the carriage in Plain and set the holding cam levers in position "I".

8) Knit one row and remove the cast on comb.

9) Using the tapestry needle and bind off. (See Fig.52 and Fig.53)

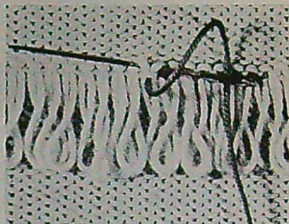


Fig. 52

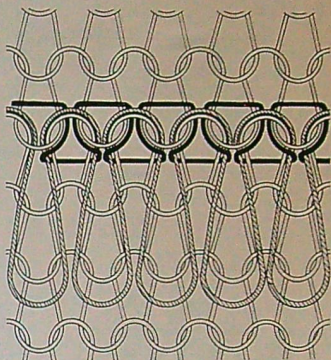
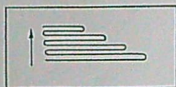


Fig. 53

25. Partial knitting of Plain knitting.

● Decreasing the part of knitting.



Set the holding cam levers in position "I".

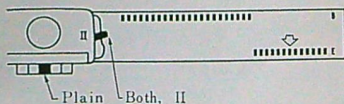


Fig. 54

- 1) In the opposite side of carriage, bring up the needles to position 'E'.

The number of needles which are raised up to position "E", depends on the shape of the curve. (See Fig. 54)

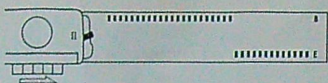


Fig. 55

- 2) Knit one row.

The needles in position "B" are knitted and the yarn will lay across on the stem of the needles in position "E".

(See Fig. 55)

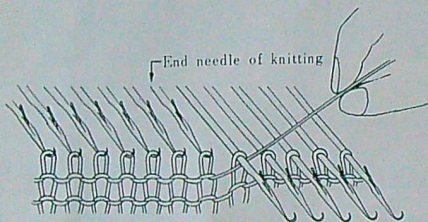


Fig. 56

- 3) Pass the yarn under the stem of needle which is first needle of the position "E".

(See Fig. 56.)

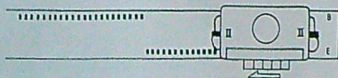
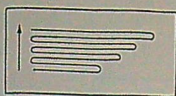


Fig. 57

- 4) Knit one row.

Repeat the step (1), (2), (3) and (4).

● Increasing the part of knitting.



(1)

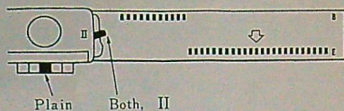


Fig. 58

(2)

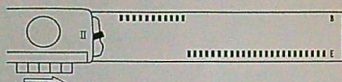


Fig. 59

(3)

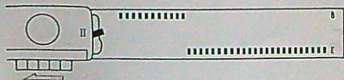


Fig. 60

(4)

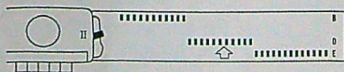


Fig. 61

Set the holding cam levers in position "I".

- 1) In the opposite side of carriage, bring up the needles to position "E".

The number of needles which are raised up to position "E", depend on the shape of the curve, you want to get.

(See Fig. 58)

- 2) Knit one row.

The needles in the position "B" are knitted and the yarn will lay across on the stems of the needles in position "E".

(See Fig. 59)

- 3) Pass the yarn under the stem of the first needle which were not knitted. (See Fig. 58)

- 4) Knit back one row. (See Fig. 60)

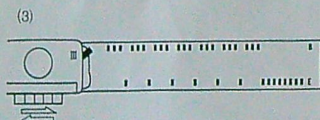
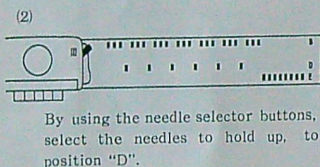
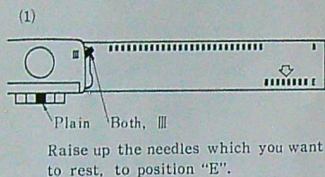
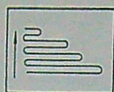
- 5) Manually move back the needles from position "E", to "D" which you want to increase. (See Fig. 61)

26. Partial knitting of Holding stitch pattern.

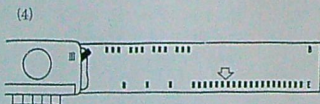
As one example, we select one holding pattern as follows, every fourth needles have 2 holding stitches and 2 plain stitches, mutually.

Set the holding cam levers in position "I".

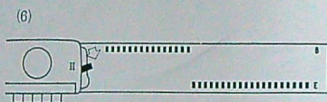
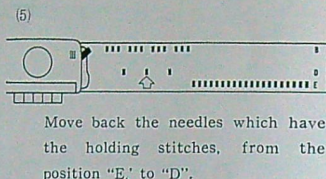
● Decreasing the part of knitting.



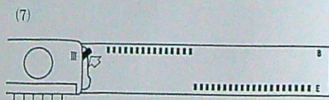
Knit 2 rows. But, in the end of the first row, pass the yarn under the stem of the first needle in the position "E".



Raise up several needles which you want to rest, to the position "E".

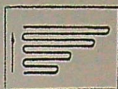


Change the holding cam lever in knit side of the carriage from "I" to "II". Knit two rows.

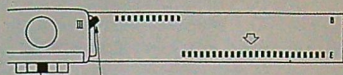


Change the holding cam lever from "I" to "II". Repeat (1), (2), (3), (4), (5), (6) and (7).

● Increasing the part of knitting.



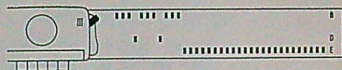
(1)



Plain Both, III

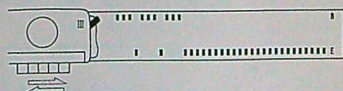
Raise up the needles which you want to rest, to the position "E".

(2)



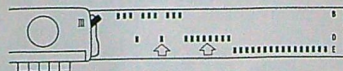
2) By using the needle selector buttons, select the needles to hold up, to position "D".

(3)



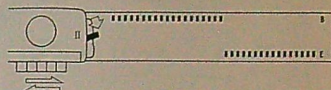
Knit 2 rows. But in the end of the first row, pass the yarn under the stem of the first needle in the position "E".

(4)



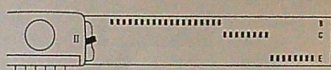
Move back the needles which have the holding stitches and you want to knit, from "E" to "D".

(5)



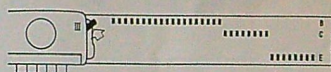
Change the holding cam lever in knit side of the carriage, from "III" to "I". Knit 2 rows.

(6)



Move back the needles which you want to knit, from "E" to "C".

(7)



Change the holding cam lever, from "I" to "III".

Repeat (1) (2) (3) (4) (5) (6) and (7).

27. Partial knitting of Tucking (stitch) pattern.

As one example, we select one tucking pattern, as follows, every other needles have one tucking stitch and one plain stitch mutually. Set the carriage.

When carriage is right side of the knitting,

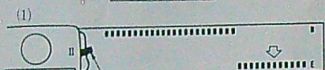
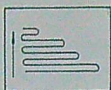
push in "TUCK" (←).

When carriage is left side of the knitting,

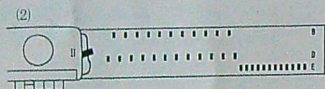
push in "TUCK" (→).

Set the both holding cam levers in position II.

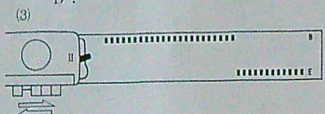
● Decreasing the part of knitting.



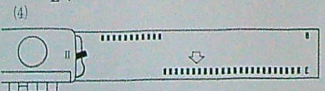
Tuck → Both, II
Place the needles to knit in position "B" and raise up other needles to position "E".



Using the needle selector buttons select the needles to position "D".



Knit 2 rows. But in the end of the first row, pass the yarn under the stem of the first needle in position "E".

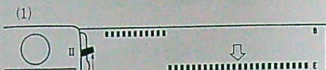
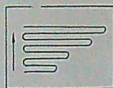


Raise up the needles which you want to rest.

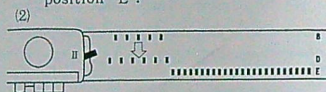
Using the needle selector buttons select the different needles from step (2) Knit 2 rows.

Repeat step (1), (2), (3), (4), (5) and (6).

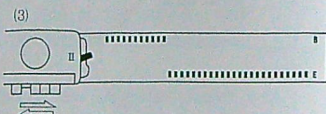
● Increasing the part of knitting.



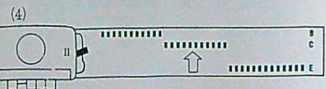
Tuck → Both, II
Place the needles to knit in position "B" and raise up other needles to position "E".



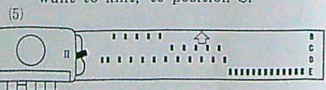
Using the needles selector buttons select the needles to position "D".



Knit 2 rows.



Move back the needles which you want to knit, to position C.



Using the needle selector buttons select the different needles from step (2)

- 6) Using the transfer tool, transfer the stitches on the back of the latches in the position "C", in the hooks of the needles and place these needles in position "B".
- 7) Repeat step (1) (2) (3) (4) (5) and (6).

28. How to bind off.

Tapestry needle is used for binding off the stitches of 1st row.

- 1) Thread the needle with yarn three times the length of the garment to be bound off. Insert the needle into the first stitch as shown in Fig. 63.

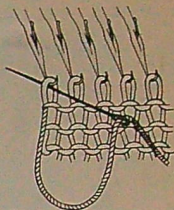


Fig. 63

- 2) Insert the needle into the second stitch and back through the first stitch. As shown in Fig. 64.
- 3) Then insert the needle into the third stitch back through the second stitch pulling the yarn snug. See Fig. 65.

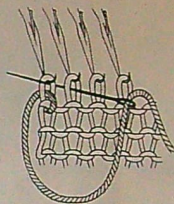


Fig. 64

- 4) Repeat this procedure to the end. Remove the garment from the machine.

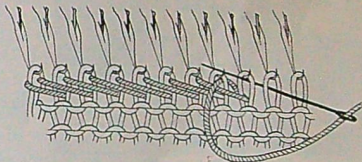
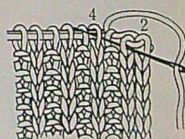
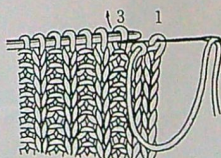
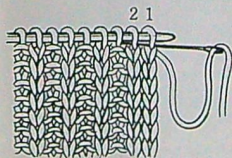


Fig. 65

● How to bind off one knit one purl.



CARE OF YOUR KNITTING MACHINE

1. How to replace the needles

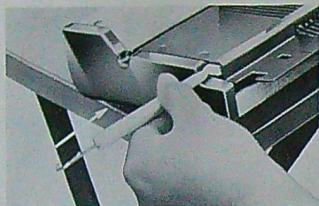


Fig. 1

- 1) Push either side of the felt bar and piece with the end of latch tool. The felt bar end then appears on the side. See Fig. 1.



Fig. 2

- 2) Withdraw it by hand from the knitter until the needle you wish to change is freed. See Fig. 2.

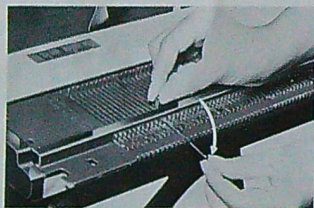


Fig. 3

- 3) Bring forward the needle as far as it will go.

- 4) Push down the hook of the needle, until shank end of the needle rises free of the needle bed. See Fig. 3

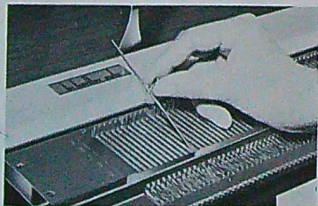


Fig. 4

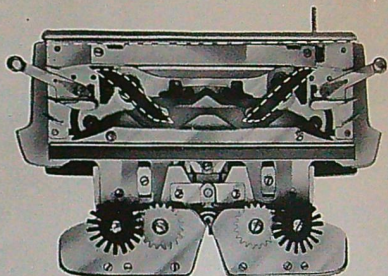
- 4) Grasp the shank end and draw it out backwards. See Fig. 4

- 6) Replace with new the needle by holding it with latch opened.
- 7) Push in the foam bar, making sure that the foam face downward.

2. Cleaning and Oiling

For best results your knitter must be kept clean and visible working parts regularly oiled.

The Carriage



- 1) Remove the carriage from the needle bed.
- 2) With a lightly oiled lint free cloth, wipe away all fluff that has gathered on the working parts underneath the carriage.
- 3) Leave a very film of oil over all moving parts of the carriage and the upper and lower cam strips and back and front rails.
- 4) Avoid getting oil onto the

brushes and bushwheels as this will transmit itself to the knitting.

The Needle Bed

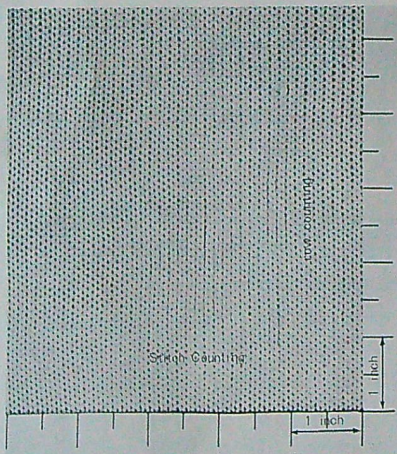
- 1) With a very soft brush clean out the needle bed grooves.
- 2) With a lightly oiled lint free cloth wipe away all fluff that has gathered on the needle bed and along the carriage slide rails.
- 3) Leave a very fine film of oil over the carriage slide rails, the top of the needle bed and the needle butts.
- 4) Avoid getting oil onto the needle hooks and latches as this will transmit itself to the knitting.
- 5) Keep your knitter covered when not in use, and in a dry place.

Note : Clean and oil it each time you have finished knitting and clean off all excess oil before use, especially from those parts which will come into contact with the knitting. Always leave a light film of oil under the carriage on all parts between the rails.

TO DETERMINE THE TENSION (GAUGE OR STITCH SIZE)

When knitting either the two needle or modern knitting machine way, your tension or gauge determines the tightness or looseness of the stitches and thus the actual size of the knitted garment. Your finger tip controlled tension dial on the knitter permits an amazingly wide range of tension variation. The larger the number set on the dial, the looser will be the resulting tension.

- 1) Determine the proper gauge by making a swatch. Knit a small test piece on about 30 needles, working sets of 30 rows, each set in a different tension. Knit a single row of a different color between tension changes for easy identification. Block (press) the swatch before measuring for correctness.
- 2) Count the number of stitches per inch across, and the number of rows down per inch. Based on this mathematical approach, it soon becomes a simple matter to create your own garments on your knitter, with the assurance that the size will be correct. It is recommended that a small test swatch be made before starting each garment to prove correctness of gauge.



MEMO

MEMO

Set on III to dec.

81

